

National University of Engineering (UNI)

School of Sciences

School of Computer Science



Book of Bibliography by course

– 2026-II –

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Equipo de Trabajo

Dr. Ciro Nuñez Iturri
 Director (e) de la Escuela de Ciencia
 de la Computación
 email: ciro.nunez.i@uni.edu.pe

Dr. Carlos Javier Solano Salinas
 Director del Departamento de
 Ciencia de la Computación
 e-mail: jsolano@uni.edu.pe

Dr. José Luis Segovia-Juárez
 PhD en Ciencia de la Computación.
 Wayne State University (Detroit,
 USA) (2001)
 Profesor del Departamento de
 Ciencia de la Computación. UNI
 email: jsegoviaj@uni.edu.pe
<http://www.tecnociencia9.com/jlsegovia/es>

Dr. Marcos Antonio Alania Vicente
 PhD en Ciencias Universidad de
 Amberes. Bélgica (2017)
 Profesor del Departamento de
 Ciencia de la Computación. UNI
 Desarrollador de algoritmos de IA
 para procesos complejos
 interdisciplinarios
 email: alania.vicente@gmail.com

MSc. Eduardo Yauri Lozano
 MSc. en Ciencia de la Computación.
 UNI (2024)
 Profesor del Departamento de
 Ciencia de la Computación. UNI
 email: eduardo.yauri@uni.edu.pe

**MSc. Ronald Ricardo Martínez
 Chunga**
 MSc. Ciencias Ing Electrónica (2021)
 Profesor del Departamento de
 Ciencia de la Computación. UNI
 email: rmartinezch@uni.edu.pe
<https://www.linkedin.com/in/rmartinezchunga/>

Cesar Martin Cruz-Salazar
 Mag(c) en Automática e
 Instrumentación, UNI
 Profesor de Ciencia de la
 Computación, UNI, Lima-Perú
 email: ccruz@uni.edu.pe

Prof. Miguel Arrunategui Angulo
 Docente del Departamento de
 Ciencia de la Computación
 email: garrunateguia@uni.edu.pe

Mag. Yuri Ccoicca
 Departamento de Ciencia de la
 Computación, UNI, Lima-Perú
 email: yccoicca@uni.edu.pe

M.Sc. Raul Huarote Zegarra
 Mag en Ciencia de la Computación,
 UNT (2014)
 Profesor del Departamento de
 Ciencia de la Computación, UNI,
 Lima-Perú
 email: rhuarotez@uni.edu.pe

**M.Sc. Carlos Alberto Bazán
 Cabanillas**
 Magister en Ciencias, Mención
 matemáticas, UNI 1980
 Licenciado en Matemáticas, UNI
 1977
 email: cbazan@uni.edu.pe

Dr. Jose Alfredo Herrera-Quispe
 Doctor en Ciencia de la
 Computación, UNSA (2013)
 Docente del Departamento de
 Ciencia de la Computación

Mag. Sidney Weisser Valer Quispe

Maestro en Ciencia con mención en
Telemática, FIEE-UNI (2026)
Docente del Departamento de
Ciencia de la Computación
email: *svalerq@uni.edu.pe*

Mag. Johnny Quispe Obregón

Docente del Departamento de
Ciencia de la Computación
email: *johnny.quispe.o@uni.edu.pe*

Dr. Ernesto Cuadros-Vargas

Dr. en Ciencia de la Computación, Universidad de Sao Paulo, Brasil (2004)
Orador distinguido para la *Association of Computing Machinery* (ACM)
(2025-2027)
Miembro del Directorio de Gobernadores de la Sociedad de Computación del
IEEE (2020-2023)
Miembro del *Steering Committee ACM/IEEE-CS Computing Curricula 2020*
(CS2020)
Miembro del *Steering Committee ACM/IEEE-CS Computing*
Curricula/Computer Science (CS2013)
Secretario Ejecutivo del Centro Latinoamericano de Estudios en Informática
(CLEI) 2008-2016
email: *ecuadros@spc.org.pe*

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Chapter 1

First Semester

1.1 BIC101. Introduction to Computing

[Brookshear and Brylow, 2019] Brookshear, J. G. and Brylow, D. (2019). *Computer Science: An Overview*. Pearson, global edition edition.

[Cormen et al., 2009] Cormen, T. H., Leiserson, C. E., Rivest, R. L., and Stein, C. (2009). *Introduction to Algorithms*. MIT Press, 3rd edition.

[Guttag, 2013] Guttag, J. V. (2013). *Introduction to Computation and Programming Using Python*. MIT Press, 1st edition.

[Hunt and Thomas, 1999] Hunt, A. and Thomas, D. (1999). *The Pragmatic Programmer: From Journeyman to Master*. Addison-Wesley, 1st edition.

[Zelle, 2010] Zelle, J. M. (2010). *Python Programming: An Introduction to Computer Science*. Franklin, Beedle & Associates Inc, 2nd edition.

1.2 BMA101. Linear Algebra

[Lay et al., 2016] Lay, D. C., Lay, S. R., and McDonald, J. J. (2016). *Linear Algebra and Its Applications*. Pearson.

[Strang, 2016] Strang, G. (2016). *Introduction to Linear Algebra*. Wellesley-Cambridge Press.

1.3 BMA102. Differential Calculus

[Larson and Edwards, 2014] Larson, R. and Edwards, B. H. (2014). *Calculus*. Cengage Learning.

[Stewart, 2015] Stewart, J. (2015). *Calculus: Early Transcendentals*. Cengage Learning.

[Stewart, 2016] Stewart, J. (2016). *Cálculo de una variable: Trascendentes tempranas*. Cengage Learning, 8th edition.

[Thomas et al., 2014] Thomas, G. B., Weir, M. D., and Hass, J. (2014). *Cálculo de una variable*. Pearson, 13th edition.

1.4 BCH101. Chemistry I

[Brown et al., 2017] Brown, T. L., Jr., H. E. L., Bursten, B. E., Murphy, C. J., and Woodward, P. M. (2017). *Chemistry: The Central Science*. Pearson.

[Chang and Goldsby, 2016] Chang, R. and Goldsby, K. A. (2016). *Chemistry*. McGraw-Hill Education.

[Mamlouk and Zaniwski, 2017] Mamlouk, M. S. and Zaniwski, J. P. (2017). *Materials for Civil and Construction Engineers*. Pearson, 4th edition.

1.5 FG001. General Elective

[Robbins, 2004] Robbins, S. (2004). *Comportamiento Organizacional*. México, Pearson Educación.

1.6 BEI101. Technical and professional English I

[Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Español Cambridge*. Editorial Oxford.

[MacGrew, 1999] MacGrew, J. (1999). *Focus on Grammar Basic*. Editorial Oxford.

[Soars and John, 2002d] Soars, L. and John (2002d). *American Headway N 2 Student Book*. Editorial Oxford.

Chapter 2

Second Semester

2.1 CS100. Introduction to Computer Science

[Brookshear and Brylow, 2019] Brookshear, J. G. and Brylow, D. (2019). *Computer Science: An Overview*. Pearson, global edition edition.

2.2 CS112. Objects-oriented programming I

[Deitel and Deitel, 2017] Deitel, H. and Deitel, P. (2017). *C++17: The Complete Guide*. Pearson.

[Josuttis, 2019] Josuttis, N. M. (2019). *C++17: The Complete Guide*. Pearson Education.

[Robbins and Beebe, 2005] Robbins, A. and Beebe, N. H. (2005). *Classic Shell Scripting*. O'Reilly Media.

[Stroustrup, 2013] Stroustrup, B. (2013). *The C++ Programming Language*. Addison-Wesley Professional.

2.3 CS1D1. Discrete Structures

[Grimaldi, 2003] Grimaldi, R. P. (2003). *Discrete and Combinatorial Mathematics: An Applied Introduction*. Pearson, 5th edition.

[Lehman et al., 2018] Lehman, E., Leighton, F. T., and Meyer, A. R. (2018). *Mathematics for Computer Science*. MIT OpenCourseWare.

[Rosen, 2019] Rosen, K. H. (2019). *Discrete Mathematics and Its Applications*. McGraw-Hill Education, 8th edition.

[Scheinerman, 2012] Scheinerman, E. A. (2012). *Mathematics: A Discrete Introduction*. Cengage Learning, 3rd edition.

[Velleman, 2019] Velleman, D. J. (2019). *How to Prove It: A Structured Approach*. Cambridge University Press, 3rd edition.

2.4 BMA103. Integral Calculus

[Larson and Edwards, 2014] Larson, R. and Edwards, B. H. (2014). *Calculus*. Cengage Learning.

[Stewart, 2015] Stewart, J. (2015). *Calculus: Early Transcendentals*. Cengage Learning.

2.5 BFI101. Physics I

[Kleppner and Kolenkow, 2013] Kleppner, D. and Kolenkow, R. J. (2013). *An Introduction to Mechanics*. Cambridge University Press, 2nd edition.

[Serway and Jewett, 2018] Serway, R. A. and Jewett, J. W. (2018). *Physics for Scientists and Engineers with Modern Physics*. Cengage Learning, 10th edition.

[Tipler and Mosca, 2007] Tipler, P. A. and Mosca, G. (2007). *Physics for Scientists and Engineers*. W. H. Freeman and Company, 6th edition.

[Young and Freedman, 2015] Young, H. D. and Freedman, R. A. (2015). *Sears and Zemansky's University Physics with Modern Physics*. Pearson Education, 14th edition.

2.6 BEI102. Technical and professional English II

[Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Español Cambridge*. Editorial Oxford.

[MacGrew, 1999] MacGrew, J. (1999). *Focus on Grammar Basic*. Editorial Oxford.

[Soars and John, 2002a] Soars, L. and John (2002a). *American Headway N 1 Student Book*. Editorial Oxford.

Chapter 3

Third Semester

3.1 CS113. Objects-oriented programming II

[Gamma et al., 1994] Gamma, E., Helm, R., Johnson, R., and Vlissides, J. (1994). *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley Professional.

[Gregor, 2017] Gregor, D. (2017). *Advanced C++: Master the Technique of Template Metaprogramming*. Addison-Wesley Professional.

[Josuttis, 2019] Josuttis, N. M. (2019). *C++17: The Complete Guide*. Pearson Education.

[Meyers, 2014] Meyers, S. (2014). *Effective Modern C++: 42 Specific Ways to Improve Your Use of C++11 and C++14*. O'Reilly Media.

[Stroustrup, 2013] Stroustrup, B. (2013). *The C++ Programming Language*. Addison-Wesley Professional.

[Stroustrup, 2022] Stroustrup, B. (2022). *A Tour of C++*. Addison-Wesley Professional, 3rd edition.

[Vandevoorde et al., 2017] Vandevoorde, D., Josuttis, N. M., and Gregor, D. (2017). *C++ Templates: The Complete Guide*. Addison-Wesley Professional.

[Williams, 2019] Williams, A. (2019). *C++ Concurrency in Action*. Manning Publications.

3.2 CS2B1. Platform Based Development

[Deitel et al., 2017] Deitel, P., Deitel, H., and Deitel, A. (2017). *Android How to Program*. Pearson, 3rd edition.

[Duckett, 2014] Duckett, J. (2014). *JavaScript and JQuery: Interactive Front-End Web Development*. Wiley.

[Fielding, 2000] Fielding, R. T. (2000). *Architectural Styles and the Design of Network-based Software Architectures*. PhD thesis, University of California, Irvine.

-
- [Flanagan, 2020] Flanagan, D. (2020). *JavaScript: The Definitive Guide*. O'Reilly Media, 7th edition.
- [Gasca, 2021] Gasca, J. (2021). *Web Security for Developers*. No Starch Press.
- [Hellman, 2013] Hellman, E. (2013). *Android Programming: Pushing the Limits*. Wiley.

3.3 AI161. Applied AI

- [Bender et al., 2021] Bender, E. M., Gebru, T., McMillan-Major, A., and Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (FAccT '21)*, pages 610–623. Association for Computing Machinery. Foundational paper on AI ethics with ongoing relevance.
- [Chinese Academy of Cyberspace Studies, 2024] Chinese Academy of Cyberspace Studies (2024). Ai governance and ethics in china. Technical report, Cyberspace Administration of China. Official Chinese perspective on AI governance and ethical standards.
- [Cloud, 2024a] Cloud, A. (2024a). AI Ethics and best practices in the chinese context. Chinese perspective on AI ethics and implementation guidelines.
- [Cloud, 2024b] Cloud, G. (2024b). Introduction to responsible ai. Google's updated framework for responsible AI development and use.
- [DeepSeek, 2024] DeepSeek (2024). Deepseek model documentation and best practices. Official documentation for DeepSeek AI models and usage guides.
- [European Union, 2024] European Union (2024). AI Act: Regulatory framework. Technical report, European Commission. Comprehensive AI regulation framework effective in 2024.
- [Institute, 2024] Institute, T. R. (2024). Ai development in china: Current status and future trends. Technical report, Tencent Research Institute. Comprehensive analysis of the development of the Chinese AI ecosystem.
- [Microsoft, 2024] Microsoft (2024). Crafting prompts for ai systems. Microsoft Learn. Official Microsoft guide for prompt engineering updated for 2024.
- [Mollick, 2023] Mollick, E. (2023). Chatgpt and how ai disrupts industries. *Harvard Business Review*, 101(5):42–51. Analysis of the practical impact of AI on global sectors.
- [Mollick and Mollick, 2024] Mollick, E. and Mollick, L. (2024). *Co-Intelligence: Living and Working with AI*. Portfolio. Practical guide for human-AI collaboration.
- [Ng, 2019] Ng, A. (2019). AI for everyone. Technical report, DeepLearning.AI. Curso en línea, actualizado continuamente en Coursera.

- [OpenAI, 2024] OpenAI (2024). Best practices for prompt engineering. Updated official prompt engineering guidelines from OpenAI.
- [Prompt Engineering Institute, 2024] Prompt Engineering Institute (2024). Prompt engineering guide. <https://www.promptingguide.ai/>. Recurso integral de ingeniería de prompts actualizado continuamente. Accedido: 15 de enero de 2024.
- [Tencent AI Lab, 2023] Tencent AI Lab (2023). Responsible ai practices in the chinese technology industry. Technical report, Tencent AI Lab. Industrial perspective on AI ethics from a leading Chinese technology company.
- [UNESCO, 2023] UNESCO (2023). Ai and education: Guidance for policy-makers. Technical report, UNESCO. Latest guidance on AI literacy and ethical implementation in education.
- [White et al., 2023] White, J., Fu, Q., Hays, S., Sandborn, M., Olea, C., Gilbert, H., Elnashar, A., Spencer-Smith, J., and Schmidt, D. C. (2023). A prompt pattern catalog to enhance prompt engineering with chatgpt. arXiv preprint. Peer-reviewed research on prompt engineering patterns.

3.4 BMA104. Advanced Differential and Integral Calculus

- [Apostol, 1997] Apostol, T. M. (1997). *Calculus, Vol. II: Multi-Variable Calculus and Linear Algebra with Applications*. John Wiley & Sons, 2nd edition.
- [Marsden and Tromba, 2011] Marsden, J. E. and Tromba, A. (2011). *Vector Calculus*. W. H. Freeman and Company, 6th edition.

3.5 STA251. Probability Calculation

- [Devore, 2016] Devore, J. L. (2016). *Probability and Statistics for Engineering and the Sciences*. Cengage Learning.
- [Ross, 2014] Ross, S. M. (2014). *A First Course in Probability*. Pearson.

3.6 BEI201. Technical and professional English III

- [Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Español Cambridge*. Editorial Oxford.
- [MacGrew, 1999] MacGrew, J. (1999). *Focus on Grammar Basic*. Editorial Oxford.
- [Soars and John, 2002d] Soars, L. and John (2002d). *American Headway N 2 Student Book*. Editorial Oxford.

Chapter 4

Fourth Semester

4.1 CS210. Algorithms and Data Structures

- [Cormen et al., 2009] Cormen, T. H., Leiserson, C. E., Rivest, R. L., and Stein, C. (2009). *Introduction to Algorithms*. MIT Press, 3rd edition.
- [Herlihy and Shavit, 2012] Herlihy, M. and Shavit, N. (2012). *The Art of Multiprocessor Programming*. Morgan Kaufmann, revised 1st edition.
- [Knuth, 1997] Knuth, D. E. (1997). *The Art of Computer Programming, Volume 1: Fundamental Algorithms*. Addison-Wesley, 3rd edition.
- [Okasaki, 1999] Okasaki, C. (1999). *Purely Functional Data Structures*. Cambridge University Press.
- [Sedgewick and Wayne, 2011] Sedgewick, R. and Wayne, K. (2011). *Algorithms*. Addison-Wesley, 4th edition.
- [Stroustrup, 2013] Stroustrup, B. (2013). *The C++ Programming Language*. Addison-Wesley, 4th edition.
- [Vandevorde et al., 2017] Vandevorde, D., Josuttis, N. M., and Gregor, D. (2017). *C++ Templates: The Complete Guide*. Addison-Wesley, 2nd edition.
- [Williams, 2019] Williams, A. (2019). *C++ Concurrency in Action*. Manning Publications, 2nd edition.

4.2 CS211. Theory of Computation

- [Cormen et al., 2022] Cormen, T. H., Leiserson, C. E., Rivest, R. L., and Stein, C. (2022). *Introduction to Algorithms*. MIT Press, 4th edition.
- [Hopcroft et al., 2013] Hopcroft, J. E., Motwani, R., and Ullman, J. D. (2013). *Introduction to Automata Theory, Languages, and Computation*. Pearson, 3rd edition.
- [Kozen, 2006] Kozen, D. C. (2006). *Theory of Computation*. Springer.
- [Sipser, 2012] Sipser, M. (2012). *Introduction to the Theory of Computation*. Cengage Learning, 3rd edition.

4.3 CS221. Computer Systems Architecture

- [Anderson, 2020] Anderson, R. J. (2020). *Security Engineering: A Guide to Building Dependable Distributed Systems*. Wiley, 3rd edition.
- [Harris and Harris, 2012] Harris, D. and Harris, S. (2012). *Digital Design and Computer Architecture*. Morgan Kaufmann, 2nd edition.
- [Patterson and Hennessy, 2020] Patterson, D. A. and Hennessy, J. L. (2020). *Computer Organization and Design RISC-V Edition: The Hardware Software Interface*. Morgan Kaufmann, 2nd edition.
- [Stallings, 2015] Stallings, W. (2015). *Computer Organization and Architecture: Designing for Performance*. Pearson, 10th edition.
- [Tanenbaum and Austin, 2012] Tanenbaum, A. S. and Austin, T. (2012). *Structured Computer Organization*. Pearson, 6th edition.

4.4 CS271. Data Management

- [Beaulieu, 2009] Beaulieu, A. (2009). *Learning SQL*. O'Reilly Media, 2nd edition.
- [Bernstein et al., 1987] Bernstein, P. A., Hadzilacos, V., and Goodman, N. (1987). *Concurrency Control and Recovery in Database Systems*. Addison-Wesley.
- [Elmasri and Navathe, 2015] Elmasri, R. and Navathe, S. B. (2015). *Fundamentals of Database Systems*. Pearson, 7th edition.
- [Ramakrishnan and Gehrke, 2002] Ramakrishnan, R. and Gehrke, J. (2002). *Database Management Systems*. McGraw-Hill, 3rd edition.
- [Silberschatz et al., 2019] Silberschatz, A., Korth, H. F., and Sudarshan, S. (2019). *Database System Concepts*. McGraw-Hill, 7th edition.

4.5 CS401. Research Methodology

- [ACM, 2008] ACM (2008). *Digital Library*. Association for Computing Machinery. <http://portal.acm.org/dl.cfm>.
- [CiteSeer.IST, 2008] CiteSeer.IST (2008). *Scientific Literature Digital Library*. College of Information Sciences and Technology, Penn State University. <http://citeseer.ist.psu.edu>.
- [IEEE-Computer Society, 2008] IEEE-Computer Society (2008). *Digital Library*. IEEE-Computer Society. <http://www.computer.org/publications/dlib>.

4.6 MA202. Numerical Methods

- [Burden and Faires, 2010] Burden, R. L. and Faires, J. D. (2010). *Numerical Analysis*. Cengage Learning.
- [Chapra and Canale, 2015] Chapra, S. C. and Canale, R. P. (2015). *Numerical Methods for Engineers*. McGraw-Hill Education.
- [Nocedal and Wright, 2006] Nocedal, J. and Wright, S. J. (2006). *Numerical Optimization*. Springer, 2nd edition.
- [Pacheco and Malensek, 2022] Pacheco, P. S. and Malensek, M. (2022). *An Introduction to Parallel Programming*. Morgan Kaufmann, 2nd edition.
- [Reddy, 2019] Reddy, J. N. (2019). *An Introduction to the Finite Element Method*. McGraw-Hill Education, 4th edition.
- [Shumway and Stoffer, 2017] Shumway, R. H. and Stoffer, D. S. (2017). *Time Series Analysis and Its Applications: With R Examples*. Springer, 4th edition.
- [Trefethen and III, 1997] Trefethen, L. N. and III, D. B. (1997). *Numerical Linear Algebra*. SIAM.
- [West, 2001] West, D. B. (2001). *Introduction to Graph Theory*. Prentice Hall, 2nd edition.

4.7 BEI202. Technical and professional English IV

- [Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Español Cambridge*. Editorial Oxford.
- [MacGrew, 1999] MacGrew, J. (1999). *Focus on Grammar Basic*. Editorial Oxford.
- [Soars and John, 2002d] Soars, L. and John (2002d). *American Headway N 2 Student Book*. Editorial Oxford.

Chapter 5

Fifth Semester

5.1 CS212. Analysis and Design of Algorithms

[Cormen et al., 2022] Cormen, T. H., Leiserson, C. E., Rivest, R. L., and Stein, C. (2022). *Introduction to Algorithms*. MIT Press, 4th edition.

[Dasgupta et al., 2006] Dasgupta, S., Papadimitriou, C., and Vazirani, U. (2006). *Algorithms*. McGraw-Hill Education.

[Kleinberg and Tardos, 2005] Kleinberg, J. and Tardos, É. (2005). *Algorithm Design*. Pearson.

[Sipser, 2012] Sipser, M. (2012). *Introduction to the Theory of Computation*. Cengage Learning, 3rd edition.

5.2 CS261. Artificial Intelligence

[Alpaydin, 2020] Alpaydin, E. (2020). *Introduction to Machine Learning*. MIT Press, 4th edition.

[Goodfellow et al., 2016] Goodfellow, I., Bengio, Y., and Courville, A. (2016). *Deep Learning*. MIT Press.

[Luger, 2008] Luger, G. F. (2008). *Artificial Intelligence: Structures and Strategies for Complex Problem Solving*. Pearson, 6th edition.

[Russell and Norvig, 2020] Russell, S. and Norvig, P. (2020). *Artificial Intelligence: A Modern Approach*. Pearson, 4th edition.

5.3 CS272. Databases II

[Agrawal et al., 2023] Agrawal, D. et al. (2023). Toward a systems architecture for ai-enabled applications. *Communications of the ACM*, 66(6):54–63.

[Garcia-Molina et al., 2008] Garcia-Molina, H., Ullman, J. D., and Widom, J. (2008). *Database Systems: The Complete Book*. Pearson, 2nd edition.

-
- [Kleppmann, 2017] Kleppmann, M. (2017). *Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems*. O'Reilly Media.
- [Manning et al., 2008] Manning, C. D., Raghavan, P., and Schütze, H. (2008). *Introduction to Information Retrieval*. Cambridge University Press.
- [Mikolov et al., 2013] Mikolov, T., Chen, K., Corrado, G., and Dean, J. (2013). Efficient estimation of word representations in vector space. *arXiv preprint*. arXiv:1301.3781.
- [MongoDB, Inc., 2025] MongoDB, Inc. (2025). *Mongodb manual*. MongoDB, Inc. <https://www.mongodb.com/docs/>.
- [Özsu and Valduriez, 2020] Özsu, M. T. and Valduriez, P. (2020). *Principles of Distributed Database Systems*. Springer, 4th edition.
- [Ramakrishnan and Gehrke, 2003] Ramakrishnan, R. and Gehrke, J. (2003). *Database Management Systems*. McGraw-Hill, 3rd edition.
- [Sadalage and Fowler, 2012] Sadalage, P. J. and Fowler, M. (2012). *NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence*. Addison-Wesley.
- [Silberschatz et al., 2019] Silberschatz, A., Korth, H. F., and Sudarshan, S. (2019). *Database System Concepts*. McGraw-Hill, 7th edition.

5.4 CS291. Software Engineering I

- [Bondi, 2015] Bondi, A. B. (2015). *Foundations of Software and System Performance Engineering: Process, Performance Modeling, Requirements, Testing, Scalability, and Practice*. Addison-Wesley, Upper Saddle River, NJ.
- [Gamma et al., 1994] Gamma, E., Helm, R., Johnson, R., and Vlissides, J. (1994). *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley.
- [Gregg, 2020] Gregg, B. (2020). *Systems Performance: Enterprise and the Cloud*. Addison-Wesley Professional, Boston, MA, 2nd edition.
- [Johnson, 2013] Johnson, J. (2013). *Designing with the Mind in Mind*. Morgan Kaufmann, 2nd edition.
- [Pressman and Maxim, 2019] Pressman, R. S. and Maxim, B. (2019). *Software Engineering: A Practitioner's Approach*. McGraw-Hill Education, 9th edition.
- [Sommerville, 2015] Sommerville, I. (2015). *Software Engineering*. Pearson, 10th edition.
- [Wiegers and Beatty, 2013] Wiegers, K. and Beatty, J. (2013). *Software Requirements*. Microsoft Press, 3rd edition.
- [Wigdor and Wixon, 2011] Wigdor, D. and Wixon, D. (2011). *Brave NUI World: Designing Natural User Interfaces for Touch and Gesture*. Morgan Kaufmann.

5.5 CS2S1. Operating systems

- [Arpaci-Dusseau and Arpaci-Dusseau, 2018] Arpaci-Dusseau, R. H. and Arpaci-Dusseau, A. C. (2018). *Operating Systems: Three Easy Pieces*. Arpaci-Dusseau Books, 1.0 edition.
- [Robbins and Beebe, 2005] Robbins, A. and Beebe, N. H. (2005). *Classic Shell Scripting*. O'Reilly Media.
- [Silberschatz et al., 2018] Silberschatz, A., Galvin, P. B., and Gagne, G. (2018). *Operating System Concepts*. Wiley, 10th edition.
- [Stallings, 2017] Stallings, W. (2017). *Operating Systems: Internals and Design Principles*. Pearson, 9th edition.
- [Tanenbaum and Bos, 2014] Tanenbaum, A. S. and Bos, H. (2014). *Modern Operating Systems*. Pearson, 4th edition.

5.6 BEI203. Technical and professional English V

- [Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Español Cambridge*. Editorial Oxford.
- [MacGrew, 1999] MacGrew, J. (1999). *Focus on Grammar Basic*. Editorial Oxford.
- [Soars and John, 2002g] Soars, L. and John (2002g). *American Headway N 3 Student Book*. Editorial Oxford.
- [Soars and John, 2002h] Soars, L. and John (2002h). *American Headway N 3 Teachers Book*. Editorial Oxford.
- [Soars and John, 2002i] Soars, L. and John (2002i). *American Headway N 3 Work Book*. Editorial Oxford.

Chapter 6

Sixth Semester

6.1 CS231. Networking and Communication

[Kurose and Ross, 2021] Kurose, J. and Ross, K. (2021). *Computer Networking: A Top-Down Approach*. Pearson, 8th edition.

[Peterson and Davie, 2022] Peterson, L. L. and Davie, B. S. (2022). *Computer Networks: A Systems Approach*. Morgan Kaufmann, 6th edition.

[Stallings, 2022] Stallings, W. (2022). *Cryptography and Network Security: Principles and Practice*. Pearson, 8th edition.

[Tanenbaum et al., 2021] Tanenbaum, A. S., Feamster, N., and Wetherall, D. J. (2021). *Computer Networks*. Pearson, 6th edition.

6.2 CS311. Algorithms for Complex Problems

[Halim and Halim, 2020] Halim, S. and Halim, F. (2020). *Competitive Programming 4: The Lower Bound of Programming Contests*. Lulu.

[Laaksonen, 2020] Laaksonen, A. (2020). *Competitive Programmer's Handbook*. Draft.

[Skiena, 2020] Skiena, S. S. (2020). *The Algorithm Design Manual*. Springer, 3rd edition.

6.3 CS312. Advanced Data Structures

[Cuadros-Vargas et al., 2004] Cuadros-Vargas, E., Romero, R. A. F., Mock, M., and Brisaboa, N. (2004). Implementing data structures: An incremental approach. Available at: <http://socios.spc.org.pe/ecuadros/cursos/pdfs/>.

[Gaede and Günther, 1998] Gaede, V. and Günther, O. (1998). Multidimensional access methods. *ACM Computing Surveys*, 30(2):170–231.

[Gamma et al., 1994] Gamma, E., Helm, R., Johnson, R., and Vlissides, J. M. (1994). *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley Professional.

-
- [Knuth, 1997] Knuth, D. E. (1997). *The Art of Computer Programming, Volume 1: Fundamental Algorithms*. Addison-Wesley Professional, 3rd edition.
- [Navarro, 2016] Navarro, G. (2016). *Compact Data Structures*. Cambridge University Press.
- [Samet, 2006] Samet, H. (2006). *Foundations of Multidimensional and Metric Data Structures*. Elsevier/Morgan Kaufmann.
- [Traina Jr et al., 2000] Traina Jr, C., Traina, A. J. M., Seeger, B., and Faloutsos, C. (2000). Slim-trees: High performance metric trees minimizing overlap between nodes. In *Advances in Database Technology - EDBT 2000*. Springer.
- [Vandevorde et al., 2018] Vandevorde, D., Josuttis, N. M., and Gregor, D. (2018). *C++ Templates: The Complete Guide*. Addison-Wesley Professional.
- [Zezula et al., 2007] Zezula, P., Amato, G., Dohnal, V., and Batko, M. (2007). *Similarity Search: The Metric Space Approach*. Springer.

6.4 CS342. Compilers

- [Aho et al., 2006] Aho, A. V., Lam, M. S., Sethi, R., and Ullman, J. D. (2006). *Compilers: Principles, Techniques, and Tools*. Pearson, 2nd edition.
- [Appel, 2004] Appel, A. W. (2004). *Modern Compiler Implementation in Java*. Cambridge University Press, 2nd edition.
- [Cooper and Torczon, 2011] Cooper, K. and Torczon, L. (2011). *Engineering a Compiler*. Morgan Kaufmann, 2nd edition.

6.5 AI263. Introduction to Machine Learning

- [Bishop, 2006] Bishop, C. M. (2006). *Pattern Recognition and Machine Learning*. Springer.
- [Chollet, 2021] Chollet, F. (2021). *Deep Learning with Python*. Manning, 2nd edition.
- [Goodfellow et al., 2016] Goodfellow, I., Bengio, Y., and Courville, A. (2016). *Deep Learning*. MIT Press.
- [Géron, 2022] Géron, A. (2022). *Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow*. O'Reilly, 3rd edition.
- [Hastie et al., 2009] Hastie, T., Tibshirani, R., and Friedman, J. (2009). *The Elements of Statistical Learning*. Springer, 2nd edition.
- [Murphy, 2012] Murphy, K. P. (2012). *Machine Learning: A Probabilistic Perspective*. MIT Press.

6.6 FI201. Computational Physics

[Hecht, 2017] Hecht, E. (2017). *Optics*. Pearson.

[Taylor, 2005] Taylor, J. R. (2005). *Classical Mechanics*. University Science Books.

[Young and Freedman, 2018] Young, H. D. and Freedman, R. A. (2018). *University Physics with Modern Physics*. Pearson.

Chapter 7

Seventh Semester

7.1 CS251. Computer Graphics

[Angel and Shreiner, 2014] Angel, E. and Shreiner, D. (2014). *Interactive Computer Graphics: A Top-Down Approach with WebGL*. Pearson, 7th edition.

[Hearn et al., 2014] Hearn, D., Baker, M. P., and Carithers, W. (2014). *Computer Graphics with OpenGL*. Pearson, 4th edition.

[Marschner and Shirley, 2021] Marschner, S. and Shirley, P. (2021). *Fundamentals of Computer Graphics*. A K Peters/CRC Press, 5th edition.

7.2 CS292. Software Engineering II

[Bondi, 2015] Bondi, A. B. (2015). *Foundations of Software and System Performance Engineering: Process, Performance Modeling, Requirements, Testing, Scalability, and Practice*. Addison-Wesley, Upper Saddle River, NJ.

[Gamma et al., 1994] Gamma, E., Helm, R., Johnson, R., and Vlissides, J. (1994). *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley.

[Gregg, 2020] Gregg, B. (2020). *Systems Performance: Enterprise and the Cloud*. Addison-Wesley Professional, Boston, MA, 2nd edition.

[Pressman and Maxim, 2019] Pressman, R. S. and Maxim, B. (2019). *Software Engineering: A Practitioner's Approach*. McGraw-Hill Education, 9th edition.

[Sommerville, 2015] Sommerville, I. (2015). *Software Engineering*. Pearson, 10th edition.

7.3 CS2H1. User Experience (UX)

[Johnson, 2020] Johnson, J. (2020). *Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Guidelines*. Morgan Kaufmann, 3rd edition.

-
- [Jurafsky and Martin, 2024] Jurafsky, D. and Martin, J. H. (2024). *Speech and Language Processing*. Prentice Hall, 3rd edition.
- [Norman, 2013] Norman, D. (2013). *The Design of Everyday Things: Revised and Expanded Edition*. Basic Books, 2nd edition.
- [Russell and Norvig, 2021] Russell, S. and Norvig, P. (2021). *Artificial Intelligence: A Modern Approach*. Pearson, 4th edition.
- [Shneiderman, 2022] Shneiderman, B. (2022). *Human-Centered AI*. Oxford University Press, 1st edition.

7.4 AI264. Deep Learning

- [Goodfellow et al., 2016] Goodfellow, I., Bengio, Y., and Courville, A. (2016). *Deep Learning*. MIT Press.
- [He et al., 2016] He, K., Zhang, X., Ren, S., and Sun, J. (2016). Deep residual learning for image recognition. *CVPR*, pages 770–778.
- [Vaswani et al., 2017] Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A., Kaiser, L., and Polosukhin, I. (2017). Attention is all you need. *Advances in Neural Information Processing Systems*, 30.

7.5 FG211. Professional Ethics

- [ACM, 2018] ACM (2018). Acm code of ethics and professional conduct. Technical report, ACM.
- [Bostrom, 2014] Bostrom, N. (2014). *Superintelligence: Paths, Dangers, Strategies*. Oxford University Press.
- [Committee, 2019] Committee, I. E. (2019). Ethical dilemmas in engineering. Technical report, IEEE.
- [Force, 2020] Force, A. E. T. (2020). Case studies in computing and society. Technical report, ACM.
- [IEEE, 2020] IEEE (2020). Ieee code of ethics. Technical report, IEEE.
- [Mehrabi et al., 2021] Mehrabi, N., Morstatter, F., Saxena, N., Lerman, K., and Galstyan, A. (2021). A survey on bias and fairness in machine learning. *ACM Computing Surveys*, 54(6).
- [Müller, 2021] Müller, V. C. (2021). *Ethics of Artificial Intelligence and Robotics*. Cambridge University Press.
- [Voigt and von dem Bussche, 2018] Voigt, P. and von dem Bussche, A. (2018). *The EU General Data Protection Regulation (GDPR): A Practical Guide*. Springer.

Chapter 8

Eighth Semester

8.1 CS281. Computing in Society

[Baase and Henry, 2017] Baase, S. and Henry, T. (2017). *A Gift of Fire: Social, Legal, and Ethical Issues for Computing Technology*. Pearson, 5th edition.

[Quinn, 2019] Quinn, M. J. (2019). *Ethics for the Information Age*. Pearson, 8th edition.

[Tavani, 2013] Tavani, H. T. (2013). *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing*. Wiley, Hoboken, NJ, 4th edition.

8.2 CS3I1. Computer Security

[Anderson, 2020] Anderson, R. (2020). *Security Engineering: A Guide to Building Dependable Distributed Systems*. Wiley, 3rd edition.

[Eilam, 2005] Eilam, E. (2005). *Reversing: Secrets of Reverse Engineering*. Wiley, Indianapolis, IN.

[National Institute of Standards and Technology, 2020] National Institute of Standards and Technology (2020). Security and privacy controls for information systems and organizations. Technical Report NIST SP 800-53 Rev. 5, National Institute of Standards and Technology, Gaithersburg, MD. Disponible en: <https://csrc.nist.gov/publications/detail/sp/800-53/rev-5/final>.

[Pfleeger et al., 2015] Pfleeger, C. P., Pfleeger, S. L., and Margulies, J. (2015). *Security in Computing*. Prentice Hall, 5th edition.

[Sikorski and Honig, 2012] Sikorski, M. and Honig, A. (2012). *Practical Malware Analysis: The Hands-On Guide to Dissecting Malicious Software*. No Starch Press, San Francisco, CA.

[Stallings, 2017] Stallings, W. (2017). *Computer Security: Principles and Practice*. Pearson, 4th edition.

8.3 CS3P1. Parallel and Distributed Computing

- [Corporation, 2024] Corporation, N. (2024). Cuda c++ programming guide. <https://docs.nvidia.com/cuda/cuda-c-programming-guide/>. Documentación oficial de NVIDIA.
- [Herlihy et al., 2020] Herlihy, M., Shavit, N., Luchangco, V., and Spear, M. (2020). *The Art of Multiprocessor Programming*. Morgan Kaufmann, 2nd edition.
- [Kirk and mei W. Hwu, 2016] Kirk, D. B. and mei W. Hwu, W. (2016). *Programming Massively Parallel Processors: A Hands-on Approach*. Morgan Kaufmann, Cambridge, MA, 3rd edition.
- [Kleppmann, 2017] Kleppmann, M. (2017). *Designing Data-Intensive Applications*. O'Reilly Media, 1st edition.
- [mei W. Hwu et al., 2022] mei W. Hwu, W., Kirk, D. B., and Hajj, I. E. (2022). *Programming Massively Parallel Processors: A Hands-on Approach*. Morgan Kaufmann, 4th edition.
- [Pacheco and Malensek, 2021] Pacheco, P. S. and Malensek, M. (2021). *An Introduction to Parallel Programming*. Morgan Kaufmann, 2nd edition.
- [Sterling et al., 2024] Sterling, T., Brodowicz, M., and Anderson, M. (2024). *High Performance Computing: Modern Systems and Practices*. Morgan Kaufmann, 2nd edition.
- [van Steen and Tanenbaum, 2023] van Steen, M. and Tanenbaum, A. S. (2023). *Distributed Systems*. Maarten van Steen, 4th edition.

8.4 CS402. Capstone Project I

- [ACM, 2008] ACM (2008). *Digital Library*. Association for Computing Machinery. <http://portal.acm.org/dl.cfm>.
- [CiteSeer.IST, 2008] CiteSeer.IST (2008). *Scientific Literature Digital Library*. College of Information Sciences and Technology, Penn State University. <http://citeseer.ist.psu.edu>.
- [IEEE-Computer Society, 2008] IEEE-Computer Society (2008). *Digital Library*. IEEE-Computer Society. <http://www.computer.org/publications/dlib>.

8.5 FG106. Theater

- [Brook, 1969] Brook, P. (1969). *El espacio vacío: Arte y técnica del teatro*. Península.
- [Campbell, 2001] Campbell, A. B. (2001). *Historia general del teatro en el Perú*. Universidad de San Martín de Porres.
- [Grotowski, 1970] Grotowski, J. (1970). *Hacia un teatro pobre*. Siglo XXI.

- [Majorana, 1958] Majorana, A. (1958). *El arte de hablar en público*. La España Moderna.
- [Miravalles, 1998] Miravalles, L. (1998). *Iniciación al teatro: teoría y práctica*. San Pablo.
- [Pavis, 1998] Pavis, P. (1998). *Diccionario del Teatro: Dramaturgia, Estética, Semiología*. Paidós.
- [Stanislavski, 1983] Stanislavski, C. (1983). *El trabajo del actor sobre sí mismo*. Quetzal.

8.6 EX301. Extracurricular Activities

- [ABET, 2022] ABET (2022). Abet criteria for student professional development. Technical report, ABET.
- [ACM, 2019] ACM (2019). Guidelines for extracurricular activities in computing. Technical report, ACM.

8.7 AI268. Computational Vision

- [Gonzalez and Woods, 2018] Gonzalez, R. C. and Woods, R. E. (2018). *Digital Image Processing*. Pearson, 4th edition.
- [Goodfellow et al., 2016] Goodfellow, I., Bengio, Y., and Courville, A. (2016). *Deep Learning*. MIT Press.
- [Prince, 2012] Prince, S. J. D. (2012). *Computer Vision: Models, Learning, and Inference*. Cambridge University Press.
- [Russell and Norvig, 2020] Russell, S. and Norvig, P. (2020). *Artificial Intelligence: A Modern Approach*. Pearson, 4th edition.
- [Szeliski, 2022] Szeliski, R. (2022). *Computer Vision: Algorithms and Applications*. Springer, 2nd edition.

8.8 CS391. Software Engineering III

- [Bondi, 2015] Bondi, A. B. (2015). *Foundations of Software and System Performance Engineering: Process, Performance Modeling, Requirements, Testing, Scalability, and Practice*. Addison-Wesley, Upper Saddle River, NJ.
- [Fowler, 2017] Fowler, M. (2017). *Refactoring: Improving the Design of Existing Code*. Addison-Wesley, 2nd edition.
- [Gregg, 2020] Gregg, B. (2020). *Systems Performance: Enterprise and the Cloud*. Addison-Wesley Professional, Boston, MA, 2nd edition.
- [Kim et al., 2016] Kim, G., Humble, J., Debois, P., and Willis, J. (2016). *The DevOps Handbook*. IT Revolution Press.

[Pressman and Maxim, 2019] Pressman, R. S. and Maxim, B. (2019). *Software Engineering: A Practitioner's Approach*. McGraw-Hill Education, 9th edition.

[Sommerville, 2015] Sommerville, I. (2015). *Software Engineering*. Pearson, 10th edition.

8.9 CS393. Information systems

[Laudon and Laudon, 2021] Laudon, K. C. and Laudon, J. P. (2021). *Management Information Systems: Managing the Digital Firm*. Pearson, 17th edition.

[Stair and Reynolds, 2017] Stair, R. and Reynolds, G. (2017). *Principles of Information Systems*. Cengage Learning, 13th edition.

[Valacich and Schneider, 2021] Valacich, J. and Schneider, C. (2021). *Information Systems Today: Managing in the Digital World*. Pearson, 9th edition.

8.10 CS394. Software Architecture and DevOps for Cloud Software

[Bass et al., 2021] Bass, L., Clements, P., and Kazman, R. (2021). *Software Architecture in Practice*. Addison-Wesley Professional, 4th edition.

[Burns et al., 2022] Burns, B., Beda, J., Hightower, K., and Evenson, L. (2022). *Kubernetes: Up and Running*. O'Reilly Media, 3rd edition.

[Kim et al., 2021] Kim, G., Humble, J., Debois, P., Willis, J., and Forsgren, N. (2021). *The DevOps Handbook: How to Create World-Class Agility, Reliability, and Security in Technology Organizations*. IT Revolution Press, 2nd edition.

[Morris, 2021] Morris, K. (2021). *Infrastructure as Code: Dynamic Systems for the Cloud Age*. O'Reilly Media, 2nd edition.

[Newman, 2021] Newman, S. (2021). *Building Microservices: Designing Fine-Grained Systems*. O'Reilly Media, 2nd edition.

[Richards and Ford, 2020] Richards, M. and Ford, N. (2020). *Fundamentals of Software Architecture: An Engineering Approach*. O'Reilly Media, 1st edition.

8.11 CS395. Software Quality

[Beck, 2002] Beck, K. (2002). *Test-Driven Development: By Example*. Addison-Wesley.

[Bondi, 2015] Bondi, A. B. (2015). *Foundations of Software and System Performance Engineering: Process, Performance Modeling, Requirements, Testing, Scalability, and Practice*. Addison-Wesley, Upper Saddle River, NJ.

-
- [Forsgren et al., 2018] Forsgren, N., Humble, J., and Kim, G. (2018). *Accelerate: The Science of Lean Software and DevOps: Building and Scaling High Performing Technology Organizations*. IT Revolution Press.
- [Fowler, 2017] Fowler, M. (2017). *Refactoring: Improving the Design of Existing Code*. Addison-Wesley, 2nd edition.
- [Gregg, 2020] Gregg, B. (2020). *Systems Performance: Enterprise and the Cloud*. Addison-Wesley Professional, Boston, MA, 2nd edition.
- [International Organization for Standardization, 2011] International Organization for Standardization (2011). Iso/iec 25010:2011 – systems and software engineering – systems and software quality requirements and evaluation (square) – system and software quality models. ISO/IEC.
- [Kim et al., 2021] Kim, G., Humble, J., Debois, P., Willis, J., and Forsgren, N. (2021). *The DevOps Handbook: How to Create World-Class Agility, Reliability, and Security in Technology Organizations*. IT Revolution Press, 2nd edition.
- [Sommerville, 2015] Sommerville, I. (2015). *Software Engineering*. Pearson, 10th edition.
- [Wynne and Hellesøy, 2012] Wynne, M. and Hellesøy, A. (2012). *The Cucumber Book: Behaviour-Driven Development for Testers and Developers*. Pragmatic Bookshelf.

Chapter 9

Ninth Semester

9.1 CS370. Big Data

[Bill and Matei, 2018] Bill, C. and Matei, Z. (2018). *Spark: The Definitive Guide: Big Data Processing Made Simple*. O'Reilly Media.

[Karau et al., 2017] Karau, H., Konwinski, A., Wendell, P., and Zaharia, M. (2017). *Learning Spark: Lightning-Fast Big Data Analysis*. O'Reilly Media.

[Kleppmann, 2017] Kleppmann, M. (2017). *Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems*. O'Reilly Media.

[Lin and Dyer, 2010] Lin, J. and Dyer, C. (2010). *Data-Intensive Text Processing with MapReduce*. Morgan and Claypool Publishers.

[Matei et al., 2012] Matei, Z., Mosharaf, C., Tathagata, D., Ankur, D., Justin, M., Murphy, M., J, F. M., Scott, S., and Ion, S. (2012). Resilient distributed datasets: A fault-tolerant abstraction for in-memory cluster computing. In *Proceedings of the 9th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*. USENIX Association.

[Psaltis, 2017] Psaltis, A. (2017). *Streaming Data: Understanding the real-time pipeline*. Manning Publications.

[Sadalage and Fowler, 2012] Sadalage, P. J. and Fowler, M. (2012). *NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence*. Addison-Wesley.

[White, 2015] White, T. (2015). *Hadoop: The Definitive Guide*. O'Reilly Media, 4th edition.

9.2 CS400. Pre-professional internships

[de Educación de la ACM, 2022] de Educación de la ACM, C. (2022). Guía para prácticas pre-profesionales exitosas en ciencia de la computación. Technical report, Association for Computing Machinery.

[Society, 2021] Society, I. C. (2021). *Prácticas Profesionales en Computación: Ética y Gestión*. IEEE Press.

9.3 CS403. Capstone Project II

[ACM, 2008] ACM (2008). *Digital Library*. Association for Computing Machinery. <http://portal.acm.org/dl.cfm>.

[CiteSeer.IST, 2008] CiteSeer.IST (2008). *Scientific Literature Digital Library*. College of Information Sciences and Technology, Penn State University. <http://citeseer.ist.psu.edu>.

[IEEE-Computer Society, 2008] IEEE-Computer Society (2008). *Digital Library*. IEEE-Computer Society. <http://www.computer.org/publications/dlib>.

9.4 AI365. Advanced Generative AI Models

[Goodfellow et al., 2014] Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., Courville, A., and Bengio, Y. (2014). Generative adversarial networks. In *NeurIPS*.

[Rombach et al., 2022] Rombach, R., Blattmann, A., Lorenz, D., Esser, P., and Ommer, B. (2022). High-resolution image synthesis with latent diffusion models. *CVPR*.

[Sohl-Dickstein et al., 2023] Sohl-Dickstein, J., Song, Y., and Ermon, S. (2023). *Diffusion Models: A Comprehensive Practical Guide*. AI Press.

9.5 CB309. Bioinformatics

[Aluru, 2006] Aluru, S., editor (2006). *Handbook of Computational Molecular Biology*. Computer and Information Science Series. Chapman & Hall, CRC.

[Clote and Backofen, 2000] Clote, P. and Backofen, R. (2000). *Computational Molecular Biology: An Introduction*. John Wiley & Sons Ltd. 279 pages.

[Krogh et al., 1994] Krogh, A., Brown, M., Mian, I. S., Sjölander, K., and Haussler, D. (1994). Hidden markov models in computational biology, applications to protein modeling. *J Molecular Biology*, 235:1501–1531.

[Pevzner, 2000] Pevzner, P. A. (2000). *Computational Molecular Biology: an Algorithmic Approach*. The MIT Press.

[R et al., 1998] R, D., S.R, E., A, K., and G, M. (1998). *Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids*. Cambridge University Press.

[Setubal and Meidanis, 1997] Setubal, J. C. and Meidanis, J. (1997). *Introduction to computational molecular biology*. Boston: PWS Publishing Company.

9.6 AI369. Robotics

- [Craig, 2017] Craig, J. J. (2017). *Introduction to Robotics: Mechanics and Control*. Pearson, 4th edition.
- [Siegwart et al., 2011] Siegwart, R., Nourbakhsh, I. R., and Scaramuzza, D. (2011). *Introduction to Autonomous Mobile Robots*. MIT Press, 2nd edition.
- [Thrun et al., 2005] Thrun, S., Burgard, W., and Fox, D. (2005). *Probabilistic Robotics*. MIT Press.

9.7 CS351. Topics in Computer Graphics

- [LaValle, 2023] LaValle, S. M. (2023). *Virtual Reality*. Cambridge University Press.
- [Marschner and Shirley, 2021a] Marschner, S. and Shirley, P. (2021a). *Fundamentals of Computer Graphics*. CRC Press, 5th edition.
- [Marschner and Shirley, 2021b] Marschner, S. and Shirley, P. (2021b). *Fundamentals of Computer Graphics*. CRC Press, 5th edition. Same book as Marschner2021; alternate citation key using lead author Shirley.
- [Noble, 2012] Noble, J. (2012). *Programming Interactivity: A Designer's Guide to Processing, Arduino, and OpenFrameworks*. O'Reilly Media, 2nd edition.
- [Parent, 2012] Parent, R. (2012). *Computer Animation: Algorithms and Techniques*. Morgan Kaufmann, 3rd edition.

9.8 CS353. Quantum Computing

- [Bravyi et al., 2022] Bravyi, S., Dial, O., Gambetta, J. M., Gil, D., and Nazario, Z. (2022). Quantum algorithms for fixed qubit architectures. *Nature Reviews Physics*, 4(8):499–512. Survey on quantum algorithms for optimization and simulation with near-term devices.
- [IBM Research, 2023] IBM Research (2023). Ibm quantum hardware roadmap. Technical report, IBM Research. Accedido: 2026-02-13. La página original ha sido movida o actualizada.
- [Möttönen and Vartiainen, 2023] Möttönen, M. and Vartiainen, J. (2023). *Quantum Computing: From Qubits to Quantum Machines*. Springer.
- [Nielsen and Chuang, 2010] Nielsen, M. A. and Chuang, I. L. (2010). *Quantum Computation and Quantum Information*. Cambridge University Press.
- [Preskill, 2018] Preskill, J. (2018). Lecture notes on quantum computation. Curso Ph219/CS219, California Institute of Technology. Material disponible en línea. La URL original <http://theory.caltech.edu/~preskill/ph219/> no está operativa (febrero 2026). Se recomienda buscar la versión actual en el sitio web del autor.

- [Schuld and Petruccione, 2021] Schuld, M. and Petruccione, F. (2021). *Machine Learning with Quantum Computers*. Springer, 2nd edition. Comprehensive introduction to quantum machine learning algorithms and implementations.
- [Team, 2019] Team, G. A. Q. (2019). Quantum supremacy using a programmable superconducting processor. *Nature*, 574.
- [Team, 2023] Team, I. Q. (2023). *Qiskit Textbook*. IBM.

9.9 CS392. Tópicos en Ingeniería de Software

- [Bondi, 2015] Bondi, A. B. (2015). *Foundations of Software and System Performance Engineering: Process, Performance Modeling, Requirements, Testing, Scalability, and Practice*. Addison-Wesley, Upper Saddle River, NJ.
- [Fowler, 2018] Fowler, M. (2018). *Refactoring: Improving the Design of Existing Code*. Addison-Wesley Professional, 2nd edition.
- [Gregg, 2020] Gregg, B. (2020). *Systems Performance: Enterprise and the Cloud*. Addison-Wesley Professional, Boston, MA, 2nd edition.
- [Pressman and Maxim, 2014] Pressman, R. S. and Maxim, B. (2014). *Software Engineering: A Practitioner's Approach*. McGraw-Hill, 8th edition.
- [Sommerville, 2015] Sommerville, I. (2015). *Software Engineering*. Pearson, 10th edition.

9.10 CS3P3. Internet of Things

- [Buyya and Dastjerdi, 2016] Buyya, R. and Dastjerdi, A. V. (2016). *Internet of Things: Principles and Paradigms*. Morgan Kaufmann.
- [Hanes et al., 2017] Hanes, D., Salgueiro, G., and Grossetete, P. (2017). *IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things*. Cisco Press.

Chapter 10

Tenth Semester

10.1 CS3P2. Cloud Computing

[Buyya et al., 2013] Buyya, R., Vecchiola, C., and Selvi, S. T. (2013). *Mastering Cloud Computing: Foundations and Applications Programming*. Morgan Kaufmann, 1st edition.

[Marinescu, 2022] Marinescu, D. C. (2022). *Cloud Computing: Theory and Practice*. Morgan Kaufmann, 3rd edition.

10.2 CS404. Research Workshop

[ACM, 2008] ACM (2008). *Digital Library*. Association for Computing Machinery. <http://portal.acm.org/dl.cfm>.

[IEEE-Computer Society, 2008] IEEE-Computer Society (2008). *Digital Library*. IEEE-Computer Society. <http://www.computer.org/publications/dlib>.

10.3 AI367. Topics in Artificial Intelligence

[Bostrom, 2014] Bostrom, N. (2014). *Superintelligence: Paths, Dangers, Strategies*. Oxford University Press.

[Foster, 2022] Foster, D. (2022). *Generative Deep Learning*. O'Reilly Media, 2nd edition.

[Goodfellow et al., 2016] Goodfellow, I., Bengio, Y., and Courville, A. (2016). *Deep Learning*. MIT Press.

[Russell and Norvig, 2020] Russell, S. and Norvig, P. (2020). *Artificial Intelligence: A Modern Approach*. Pearson, 4th edition.

[Sutton and Barto, 2018] Sutton, R. S. and Barto, A. G. (2018). *Reinforcement Learning: An Introduction*. MIT Press, 2nd edition.

[Tunstall et al., 2022] Tunstall, L., von Werra, L., and Wolf, T. (2022). *Natural Language Processing with Transformers*. O'Reilly Media.

10.4 AI368. Evolutionary Computing

- [Back, 1996] Back, T. (1996). *Evolutionary Algorithms in Theory and Practice*. Oxford University Press.
- [Deb, 2001] Deb, K. (2001). *Multi-Objective Optimization using Evolutionary Algorithms*. Wiley.
- [Eiben and Smith, 2015] Eiben, A. E. and Smith, J. E. (2015). *Introduction to Evolutionary Computing*. Springer, 2nd edition.
- [Mitchell, 1998] Mitchell, M. (1998). *An Introduction to Genetic Algorithms*. MIT Press.

10.5 FG350. Leadership and Performance

- [Cardona and Lombardi, 2002] Cardona, P. and Lombardi, P. G. (2002). *Cómo desarrollar las Competencias de Liderazgo*. PAD, Lima, 3rd edition.
- [Cardona and na, 2008] Cardona, P. and na, C.R. P. (2008). *Dirección por misiones: Cómo generar empresas de alto rendimiento*. Deusto.
- [Cardona and Wilkinson, 2009] Cardona, P. and Wilkinson, H. (2009). *Creando como Líder*. Ediciones Universidad de Navarra EUNSA.
- [Chinchilla and Moragas, 2007] Chinchilla, N. and Moragas, M. (2007). *Dueños de Nuestro Destino*. Editorial Ariel.
- [Dianine-Havard, 2009] Dianine-Havard, A. (2009). *Perfil del Líder. Hacia un Liderazgo Virtuoso*. Ediciones Urano S.A.
- [D'Souza, 1994] D'Souza, A. (1994). *Descubre tu Liderazgo*. Editorial Sal Terrae.
- [Ferreiro and Alcázar, 2009] Ferreiro, P. and Alcázar, M. (2009). *Gobierno de Personas en la Empresa*. Ediciones Universidad de Navarra EUNSA.
- [Goleman, 2012] Goleman, D. (2012). *Inteligencia emocional*. Editorial Kairós.
- [Hawkins, 2012] Hawkins, P. (2012). *Coaching y liderazgo de equipos*. Ediciones Granica.
- [Hersey et al., 1998] Hersey, P., Blanchard, K. H., and Johnson, D. E. (1998). *Administración del comportamiento organizacional: liderazgo situacional*. Prentice Hall, 7th edition.
- [Huete, 2008] Huete, L. M. (2008). *Construye tu Sueño*. LID Editorial Empresarial.
- [Hunsaker, 2010] Hunsaker, P. (2010). *El nuevo arte de gestionar equipos*. Empresa Activa.
- [Lencioni, 2003] Lencioni, P. (2003). *Las cinco disfunciones de un equipo*. Empresa Activa.