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Facultad de Ciencias

Escuela Profesional de Ciencia de la Computación

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Primer Semestre

1.1. BIC101. Introducción a la Computación

[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. Algebra Lineal

[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. Cálculo Diferencial

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

1.5. BEI101. Inglés I

[Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Espanol 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.

Capítulo 2

Segundo Semestre

2.1. CS100. Introducción a la Ciencia de la Computación

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

2.2. CS112. Programación Orientada a Objetos I

[Deitel and Deitel, 2017] Deitel, H. and Deitel, P. (2017). *C++ How to Program*. Pearson, Boston, MA, 10th edition.

[Josuttis, 2019] Josuttis, N. M. (2019). *C++17: The Complete Guide*. Pearson Education, Indianapolis, IN, 1st edition.

[Robbins and Beebe, 2005] Robbins, A. and Beebe, N. H. (2005). *Classic Shell Scripting*. O'Reilly Media, Sebastopol, CA, 1st edition.

[Stroustrup, 2013] Stroustrup, B. (2013). *The C++ Programming Language*. Addison-Wesley Professional, Upper Saddle River, NJ, 4th edition.

2.3. CS1D1. Estructuras Discretas

[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. Cálculo Integral

[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. Física 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. Inglés II

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

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

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

Capítulo 3

Tercer Semestre

3.1. CS113. Programación Orientada a Objetos 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, Reading, MA, 1st edition.

[Gregor, 2017] Gregor, D. (2017). *Advanced C++: Master the Technique of Template Metaprogramming*. Addison-Wesley Professional, Upper Saddle River, NJ, 1st edition.

[Josuttis, 2019] Josuttis, N. M. (2019). *C++17: The Complete Guide*. Pearson Education, Indianapolis, IN, 1st edition.

[Meyers, 2014] Meyers, S. (2014). *Effective Modern C++: 42 Specific Ways to Improve Your Use of C++11 and C++14*. O'Reilly Media, Sebastopol, CA, 1st edition.

[Stroustrup, 2013] Stroustrup, B. (2013). *The C++ Programming Language*. Addison-Wesley Professional, Upper Saddle River, NJ, 4th edition.

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

[Vandevoorde et al., 2017] Vandevoorde, D., Josuttis, N. M., and Gregor, D. (2017). *C++ Templates: The Complete Guide*. Addison-Wesley Professional, Upper Saddle River, NJ, 2nd edition.

[Williams, 2019] Williams, A. (2019). *C++ Concurrency in Action*. Manning Publications, Shelter Island, NY, 2nd edition.

3.2. CS2B1. Desarrollo Basado en Plataformas

[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. IA Aplicada

[Bender et al., 2021] Bender, E. M., Gebru, T., et al. (2021). On the dangers of stochastic parrots: Can language models be too big? *FAccT '21: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency.* Foundational paper on AI ethics with ongoing relevance.

[Cloud, 2024] Cloud, A. (2024). AI Ethics and best practices in chinese context. Chinese perspective on AI ethics and implementation guidelines.

[DeepSeek, 2024] DeepSeek (2024). Deepseek model documentation and best practices. Official documentation for DeepSeek AI models and usage guidelines.

[Google, 2024] Google (2024). Introduction to responsible ai. Google's updated framework for responsible AI development and use.

[Institute, 2024] Institute, T. R. (2024). Ai development in china: Current status and future trends. Technical report, Tencent Research Institute. Comprehensive analysis of Chinese AI ecosystem development.

[Microsoft, 2024] Microsoft (2024). Prompt crafting for ai systems. Official Microsoft prompt engineering guidance updated for 2024.

[Mollick, 2023] Mollick, E. (2023). Chatgpt and how ai disrupts industries. *Harvard Business Review.* Analysis of AI's practical impact across global sectors.

[Mollick and Mollick, 2024] Mollick, E. and Mollick, L. (2024). *Co-Intelligence: Living and Working with AI.* Penguin Random House. Practical guide to human-AI collaboration.

[Ng, 2019] Ng, A. (2019). AI for everyone. Technical report, DeepLearning.AI. Continuously updated online course, available on Coursera.

[of Cyberspace Studies, 2024] of Cyberspace Studies, C. A. (2024). Ai governance and ethics in china. Technical report, Cyberspace Administration of China. Official Chinese perspective on AI governance and ethical standards.

[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 chinese tech industry. Technical report, Tencent AI Lab. Industry perspective on AI ethics from leading Chinese tech company.

[UNESCO, 2023] UNESCO (2023). AI and education: Guidance for policymakers. Technical report, UNESCO. Latest guidance on AI literacy and ethical implementation in education.

[Union, 2024] Union, E. (2024). AI Act: Regulatory framework. Technical report, European Commission. Comprehensive AI regulation framework effective 2024.

[White et al., 2023] White, J. et al. (2023). A prompt pattern catalog to enhance prompt engineering with chatgpt. Peer-reviewed research on prompt engineering patterns.

3.4. BMA104. Cálculo Diferencial e Integral Avanzado

[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. Estadística y Probabilidades

[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. Inglés III

[Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Espanol 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.

Capítulo 4

Cuarto Semestre

4.1. CS210. Algoritmos y Estructuras de Datos

[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.

[Vandevoorde et al., 2017] Vandevoorde, 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. Teoría de la Computación

[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. Arquitectura de Computadores

[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. Bases de Datos I

[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. Metodología de la Investigación

[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. Métodos Numéricos

[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. Inglés IV

[Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Espanol 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.

Capítulo 5

Quinto Semestre

5.1. CS212. Análisis y Diseño de Algoritmos

[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. Inteligencia Artificial

[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. Bases de Datos 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. Ingeniería de Software 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. Sistemas Operativos

[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. FG106. Teatro

[Brook, 1968] Brook, P. (1968). *The Empty Space: A Book About the Theatre*. Penguin Books.

[Campbell, 2001] Campbell, A. B. (2001). *Historia general del teatro en el Perú*. Universidad de San Martín de Porres.

[Grotowski, 1970] Grotowski, J. (1970). *Towards a Poor Theatre*. Simon and Schuster.

[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). *Dictionary of the Theatre: Terms, Concepts, and Analysis*. University of Toronto Press.

[Stanislavski, 1936] Stanislavski, C. (1936). *An Actor Prepares*. Theatre Arts Books.

5.7. BEI203. Inglés V

[Cambridge, 2006] Cambridge (2006). *Diccionario Inglés-Espanol 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.

Capítulo 6

Sexto Semestre

6.1. CS231. Redes y Comunicación

[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. Algoritmos para Problemas Complejos

[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. Estructuras de Datos Avanzadas

[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.

[Vandevoorde et al., 2018] Vandevoorde, 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. Compiladores

[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. Introducción al Aprendizaje de Máquina

[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. Física Computacional

[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.

Capítulo 7

Séptimo Semestre

7.1. CS251. Computación Gráfica

[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. Ingeniería de Software 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. Experiencia de Usuario (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. Aprendizaje Profundo

[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. Ética Profesional

[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.

7.6. FG350. Liderazgo y Desempeño

[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). *Creciendo 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, 2007] Dianine-Havard, A. (2007). *Virtuous Leadership: An Agenda for Personal Excellence*. Scepter Publishers.

[D'Souza, 1994] D'Souza, A. (1994). *Discover Your Leadership Style*. St. Pauls.

[Ferreiro and Alcázar, 2009] Ferreiro, P. and Alcázar, M. (2009). *Gobierno de Personas en la Empresa*. Ediciones Universidad de Navarra EUNSA.

[Goleman, 2006] Goleman, D. (2006). *Emotional Intelligence: Why It Can Matter More Than IQ*. Bantam Books.

[Hawkins, 2011] Hawkins, P. (2011). *Leadership Team Coaching: Developing Collective Transformational Leadership*. Kogan Page.

[Hersey et al., 2007] Hersey, P., Blanchard, K. H., and Johnson, D. E. (2007). *Management of Organizational Behavior: Leading Human Resources*. Prentice Hall, 9th edition.

[Huete, 2008] Huete, L. M. (2008). *Construye tu Sueño*. LID Editorial Empresarial.

[Hunsaker, 2001] Hunsaker, P. (2001). *Training in Management Skills*. Pearson Prentice Hall.

[Lencioni, 2002] Lencioni, P. (2002). *The Five Dysfunctions of a Team: A Leadership Fable*. Jossey-Bass.

Capítulo 8

Octavo Semestre

8.1. CS281. Computación en la Sociedad

[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. Seguridad en Computación

[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. Computación Paralela y Distribuída

[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. Proyecto de tesis 1

[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. EX301. Actividades Extracurriculares

[ABET Computing Accreditation Commission, 2022] ABET Computing Accreditation Commission (2022). Abet criteria for student professional development. Technical report, ABET.

[ACM, 2019] ACM (2019). Guidelines for extracurricular activities in computing. Technical report, ACM.

8.6. ET201. Formación de Empresas de Base Tecnológica I

[Blank and Dorf, 2012] Blank, S. and Dorf, B. (2012). *The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company.* K and S Ranch.

[Byers et al., 2010] Byers, T., Dorf, R., and Nelson, A. (2010). *Technology Ventures: From Idea to Enterprise.* McGraw-Hill Science.

[Congreso de la Republica del Perú, 1996] Congreso de la Republica del Perú (1996). *Decreto Legislativo Nº823. Ley de la Propiedad Industrial.* El Peruano.

[de la Republica del Peru, 1997] de la Republica del Peru, C. (1997). *Ley Nº26887. Ley General de Sociedades.* El Peruano.

[Garzozi-Pincay et al., 2014] Garzozi-Pincay, R., Messina-Scolaro, M., Moncada-Marino, C., Ochoa-Luna, J., Ilabel-Pérez, G., and Zambrano-Segura, R. (2014). *Planes de Negocios para Emprendedores.* Iniciativa Latinoamericana de Libros de Texto Abiertos (LATIn).

[Osterwalder and Pigneur, 2010] Osterwalder, A. and Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers.* Wiley.

[Ries, 2011] Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses.* Crown Business.

8.7. AI268. Visión Computacional

[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. Ingeniería de Software 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. Sistemas de Información

[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. Arquitectura de Software y DevOps para Software en la Nube

[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. Calidad de Software

[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.

Capítulo 9

Noveno Semestre

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, Sebastopol, CA.

[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)*, San Jose, CA. 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. Prácticas Pre-profesionales

[ACM Education Committee, 2022] ACM Education Committee (2022). Guide to successful pre-professional internships in computer science. Technical report, Association for Computing Machinery. Official document with standards for internships in computing.

[IEEE Computer Society, 2021] IEEE Computer Society (2021). *Professional Practices in Computing: Ethics and Management*. IEEE Press. Best-practices manual for IT work environments.

9.3. CS403. Proyecto de tesis 2

[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. Modelos Generativos Avanzados en IA

[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. Bioinformática

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

[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 Mol. Biol*, 235:1501–1531.

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

[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. ET301. Formación de Empresas de Base Tecnológica II

[Blank and Tarkin, 2006] Blank, L. and Tarkin, A. (2006). *Ingeniería Económica.* McGraw Hill, México D.F., México.

[de Manuel Dasí and Martínez, 2006] de Manuel Dasí, F. and Martínez, R. M.-V. (2006). *Técnicas de Negociación. Un método práctico.* Esic, Madrid.

[Fisher et al., 1996] Fisher, R., Ury, W., and Patton, B. (1996). *Si... ¡de acuerdo! Cómo negociar sin ceder.* Norma, Barcelona.

[Kotler and Keller, 2006] Kotler, P. and Keller, K. L. (2006). *Dirección de Marketing.* Prentice Hall, México.

[Lovelock and Wirtz, 2009] Lovelock, C. and Wirtz, J. (2009). *Marketing de servicios. Personal, tecnología y estrategia.* Prentice Hall, México.

9.7. AI369. Robótica

[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.

9.8. CS351. Tópicos en Computación Gráfica

[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.

9.9. CS353. Computación Cuántica

[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. Accessed: 2026-02-13. The original page has been moved or updated.

[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. Ph219/CS219 course, California Institute of Technology. Material available online. The original URL http://theory.caltech.edu/~preskill/ph219/ is no longer active (February 2026). Check the author's website for the current version.

[Schuld and Petruccione, 2021] Schuld, M. and Petruccione, F. (2021). *Machine Learning with Quantum Computers*. Springer, Cham, Switzerland, 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.

9.10. 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.

9.11. CS3P3. Internet de las Cosas

[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.

Capítulo 10

Décimo Semestre

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. Taller de Investigación

[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. Tópicos en Inteligencia Artificial

[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. Computación Evolutiva

[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.