

Michael R. Nowak

Curriculum vitae

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EDUCATION

2019	Ph.D.	Computer Science	Texas A&M University
2012	B.Sc.	Neuroscience, Computer Science	Trinity University, San Antonio, TX

ACADEMIC APPOINTMENTS

08/20 – present	Teaching Assistant Professor	Department of Computer Science	University of Illinois at Urbana-Champaign
01/20 – 05/20	Visiting Assistant Professor	Computer Science and Engineering	Texas A&M University
01/17 – 12/19	Graduate Assistant Lecturer / Graduate Teaching Fellow	Computer Science and Engineering	Texas A&M University

ADMINISTRATIVE LEADERSHIP POSITIONS

2020 –	Course Director, CS 128	Department of Computer Science	University of Illinois at Urbana-Champaign
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TEACHING AND EDUCATION INNOVATIONS

Course development (CS/UIUC)

Introduction to Computer Science II (CS-128)	Approved as the second course in the introductory programming sequence of the CS curriculum at UIUC; taken by students between Computer Science I and Data Structures. Introduces students to more advanced concepts in computing and techniques/approaches for solving computational problems. Taught in the C++ programming language.
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Instructional Grants

Past Funded Projects:

3. G. Challen, G. C. Evans, M. Fleck, M. R. Nowak, & M. Woodley. *Revising the CS Introductory Programming Sequence* (extension). Strategic Instructional Initiatives Program, University of Illinois at Urbana-Champaign, College of Engineering, \$10,000 (in additional funding; grant total: \$18,500); 2021 – 2022.
2. G. Challen, M. R. Nowak, & T. Williams. *Interactive Code Walkthroughs*. Strategic Instruc-

tional Initiatives Program, University of Illinois at Urbana-Champaign, College of Engineering, \$9,800: 2021 – 2022.

1. G. Challen, G. C. Evans, M. Fleck, M. R. Nowak, & M. Woodley. *Revising the CS Introductory Programming Sequence*. Strategic Instructional Initiatives Program, University of Illinois at Urbana-Champaign, College of Engineering, \$8,500: 2020 – 2021.

TEACHING OF STUDENTS IN COURSES

CS/UIUC

2025	Summer	Introduction to Computer Science II (CS-128) Enrollment: ~70 students Language(s): C++ Format: Asynchronous online
2025	Spring	Introduction to Computer Science II (CS-128) Enrollment: ~850 students Language(s): C++ Format: Hybrid
2024	Fall	Introduction to Computer Science II (CS-128) Enrollment: ~480 students Language(s): C++ Format: Hybrid
2024	Summer	Introduction to Computer Science II (CS-128) Enrollment: ~100 students Language(s): C++ Format: Asynchronous online
2024	Spring	Introduction to Computer Science II (CS-128) Enrollment: ~960 students Language(s): C++ Format: Hybrid
2023	Fall	Introduction to Computer Science II (CS-128) Enrollment: ~660 students Language(s): C++ Format: Hybrid
2023	Summer	Introduction to Computer Science II (CS-128) Enrollment: ~130 students Language(s): C++ Format: Asynchronous online
2023	Spring	Introduction to Computer Science II (CS-128) Enrollment: ~1020 students

Language(s): C++
Format: Hybrid

2022 Fall Introduction to Computer Science II (CS-128)
Enrollment: ~560 students
Language(s): C++
Format: Hybrid

2022 Summer Introduction to Computer Science II (CS-128)
Enrollment: ~170 students
Language(s): C++
Format: Asynchronous online

2022 Spring Introduction to Computer Science II (CS-128)
Enrollment: ~1030 students
Language(s): C++
Format: Hybrid

2021 Fall Introduction to Computer Science II (CS-128)
Enrollment: ~390 students
Language(s): C++
Format: Hybrid

2021 Summer Intro to Computer Science II (CS-199-128)
Enrollment: ~30 students
Language(s): C++
Format: Asynchronous online

2021 Spring Intro to Computer Science II (CS-199-128)
Enrollment: ~40 students
Language(s): C++
Format: Asynchronous online

2020 Fall Software Design Studio (CS-126)

CS/TAMU

as the instructor of record:

2020 Spring Software Engineering (CSCE-431)
Enrollment: ~110 students
Language(s): C++
Format: Lecture, then asynchronous online

2019 Fall Introduction to Program Design and Concepts (CSCE-121)
Enrollment: ~100 students
Language(s): C++
Format: Lecture

2019	Spring	Introduction to Program Design and Concepts (CSCE-121) Enrollment: ~100 students Language(s): C++ Format: Lecture
2018	Fall	Introduction to Program Design and Concepts (CSCE-121) Enrollment: ~100 students Language(s): C++ Format: Lecture
2018	Spring	Introduction to Program Design and Concepts (CSCE-121) Enrollment: ~100 students Language(s): C++ Format: Lecture
2017	Fall	Introduction to Program Design and Concepts (CSCE-121) Enrollment: ~100 students Language(s): C++ Format: Lecture
2017	Summer	Introduction to Program Design and Concepts (CSCE-121) Enrollment: ~100 students Language(s): C++ Format: Asynchronous online
2017	Spring	Introduction to Program Design and Concepts (CSCE-121) Enrollment: ~100 students Language(s): C++ Format: Lecture

as a graduate teaching assistant:

2018	Summer	Introduction to Program Design and Concepts (CSCE-121)
2016	Fall	Seminar (CSCE-481)
2016	Summer	Introduction to Program Design and Concepts (CSCE-121)
2016	Spring	Seminar (CSCE-481)
2015	Fall	Seminar (CSCE-481)
2015	Spring	Introduction to Program Design and Concepts (CSCE-121)
2014	Fall	Intermediate Programming and Design (CSCE-113)
2014	Spring	Introduction to Program Design and Concepts (CSCE-121)
2013	Fall	Introduction to Program Design and Concepts (CSCE-121)

PUBLICATIONS

Refereed Conference Proceedings

7. **Nowak, M. R.**, Lee, J., & Choe, Y. (2019). A Queryable Graph Representation of Vascular Connectivity in the Whole Mouse Brain. In *Engineering in Medicine and Biology Society (EMBC), 2019 41th Annual International Conference of the IEEE*.
doi:10.1109/EMBC.2019.8857961.

6. **Nowak, M. R.** & Choe, Y. (2018). Data-Driven Synthetic Cerebrovascular Models for Validation of Segmentation Algorithms. In *Engineering in Medicine and Biology Society (EMBC), 2018 40th Annual International Conference of the IEEE*, 5154–7. doi:10.1109/EMBC.2018.8513456.
5. **Nowak, M. R.** & Choe, Y. (2018). Towards an open-source framework for the analysis of cerebrovasculature structure. In *Engineering in Medicine and Biology Society (EMBC), 2018 40th Annual International Conference of the IEEE*, 570–3. doi:10.1109/EMBC.2018.8512331.
4. **Nowak, M. R.**, Han, D., & Choe, Y. (2017). Biologically Grounded Synthetic Cerebrovasculature Models for Validation of Segmentation Algorithms. In *Biomedical Imaging (ISBI 2017), 2017 IEEE 14th International Symposium on*, 714–7. doi:10.1109/ISBI.2017.7950619.
3. Lim, S., **Nowak, M. R.**, & Choe, Y. (2016). Automated Neurovascular Tracing and Analysis of the Knife-Edge Scanning Microscope Rat Nissl Data Set Using a Computing Cluster. In *Engineering in Medicine and Biology Society (EMBC), 2016 38th Annual International Conference of the IEEE*, 6445–6448. doi:10.1109/EMBC.2016.7592204.
2. **Nowak, M. R.** & Choe, Y. (2016). Learning to Distinguish Cerebral Vasculature Data from Mechanical Chatter in India-Ink Images Acquired using Knife-Edge Scanning Microscopy. In *Engineering in Medicine and Biology Society (EMBC), 2016 38th Annual International Conference of the IEEE*, 3989–3992. doi:10.1109/EMBC.2016.7591601.
1. **Nowak, M. R.**, Lozovskiy, A., Dobroskok, D., & Choe, Y. (2016). Knife-Edge Scanning Microscopy for *in silico* Study of Cerebral Blood Flow: From Biological Imaging Data to Flow Simulations. In *Engineering in Medicine and Biology Society (EMBC), 2016 38th Annual International Conference of the IEEE*, 5957–5960. doi:10.1109/EMBC.2016.7592085.

Refereed Journal Articles

3. Nowak, R. M., Sen, A., Garcia, A. J., Wilkie, H., Yang, J. J., **Nowak, M. R.**, & Moyer, M. L. (2012). The Inability of Emergency Physicians to Adequately Clinically Estimate the Underlying Hemodynamic Profiles of Acutely Ill Patients. *The American Journal of Emergency Medicine*, 30(6), 954–60. doi:10.1016/j.ajem.2011.05.021.
2. Nowak, R. M., Sen, A., Garcia, A. J., Wilkie, H., Yang, J. J., **Nowak, M. R.**, & Moyer, M. L. (2011). Noninvasive Continuous or Intermittent Blood Pressure and Heart Rate Patient Monitoring in the ED. *The American Journal of Emergency Medicine*, 29(7), 782–90. doi:10.1016/j.ajem.2011.05.014.
1. **Nowak, M. R.**, Kirkpatrick, A. W., Bouffard, J. A., Amponsah, D., & Dulchavsky, S. A. (2009). Snowboarding Injuries: A Review of the Literature and an Analysis of the Potential Use of Portable Ultrasound for Mountainside Diagnostics. *Current Reviews in Musculoskeletal Medicine*, 2(1), 25–29. doi:10.1007/s12178-008-9040-5.

Abstracts

5. Lee, J., **Nowak, M. R.**, & Choe, Y. (2017). Knife-Edge Scanning Microscopy: Towards Full-Scale Analysis of the Cerebrovasculature System of the Whole Mouse Brain [Abstract]. In *Biomedical Imaging (ISBI 2017), 2017 IEEE 14th International Symposium on*.

4. Abbott, L. C., **Nowak, M.**, Yoo, J., Keyser, J., Miller, D. E., Singhai, A., Sung, C., Mayerich, D., Huffman, T., Kwon, J., & Choe, Y. (2015). Knife-Edge Scanning Microscopy and 3D Anatomy [Abstract]. In Special Issue: Abstracts of Presentations from the 2015 Meeting of the American Association of Veterinary Anatomists. *Anatomia, Histologia, Embryologia*, 44(S1), 1.
3. **Nowak, M. R.**, Navia, B., Harezlak, J., Yiannoutsos, C., Guttman, C., Singer, E., Campbell, T., Daar, E., Schifitto, G., & Tate, D. (2014). Longitudinal Progression of Cortical Atrophy in HIV-Patients on Stable Treatment [Abstract]. In Special Issue: Abstracts from the 2014 Conference on Retroviruses and Opportunistic Infections. *Topics in Antiviral Medicine*, 22(e-1), 213.
2. Reid, M., Tate, D. F., Lane, E. M., Almendarez, C., Velez, C., **Nowak, M.**, & Paul, R. H. (2013). Impact of Social Engagement on Brain Volumetrics Among the Elderly [Abstract]. In Special Issue: Abstracts Presented at the 41st Annual Meeting of the International Neuropsychological Society. *Journal of the International Neuropsychological Society*, 19(S1), 86.
1. Nowak, R., Sen, A. I., Garcia, A. J., Wilke, H., Kupriyanchik, I., **Nowak, M.**, & Moyer, M. (September 2009). Continuous Non-invasive Hemodynamics using Novel Finger-cuff Technology in Emergency Department Patients [Abstract]. In *Mediterranean Emergency Medicine Congress V*, Valencia, Spain.

Dissertation

1. **Nowak, M. R.** (2019). *Whole-Mouse Brain Vascular Analysis Framework: Synthetic Model-Based Validation, Informatics Platform, and Queryable Database* (doctoral dissertation). Department of Computer Science and Engineering, Texas A&M University, College Station, TX.

AWARDS AND HONORS

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| 2025 | Outstanding Program Program Committee Member Award, <i>30th ACM conference on Innovation and Technology in Computer Science Education</i> , Nijmegen, Netherlands |
| 2024 | Outstanding Associate Program Chair Award, <i>55th ACM Technical Symposium on Computer Science Education (SIGCSE)</i> , Portland, OR |
| 2019 | Graduate Teaching Fellowship (Fall Semester), College of Engineering, Texas A&M University |
| 2019 | Graduate Teaching Fellowship (Spring Semester), College of Engineering, Texas A&M University |
| 2017 | Graduate Teaching Fellowship (Spring Semester), College of Engineering, Texas A&M University |
| 2015 | Teaching Assistant Excellence Award (Student Selected), Department of Computer Science and Engineering, Texas A&M University |

CONFERENCE ACTIVITY/PARTICIPATION

Conferences Organized

Co-organizer, *Illinois Summer Computer Science Teaching Workshop*, Champaign, IL (June 2024).

Co-organizer, *Illinois Summer Computer Science Teaching Workshop*, Champaign, IL (June 2023).

Co-organizer, *Illinois Summer Computer Science Teaching Workshop*, Champaign, IL (August 2021).

Program Committees

Associate Program Chair, Experience Reports and Tools, 57th ACM Technical Symposium on Computer Science Education, St. Louis, MO (February 2026).

Associate Program Chair, Experience Reports and Tools, 30th ACM conference on Innovation and Technology in Computer Science Education, Nijmegen, Netherlands (June 2025).

Associate Program Chair, Position and Curricula Initiatives (PCI), 56th ACM Technical Symposium on Computer Science Education, Pittsburgh, PA (February 2025).

Associate Program Chair, Experience Reports & Tools, 29th ACM conference on Innovation and Technology in Computer Science Education, Milan, Italy (July 2024).

Associate Program Chair, Position and Curricula Initiatives (PCI), 55th ACM Technical Symposium on Computer Science Education, Portland, OR (March 2024).

Associate Program Chair, Posters, 55th ACM Technical Symposium on Computer Science Education, Portland, OR (March 2024).

Associate Program Chair, Full Papers Tract, 28th ACM conference on Innovation and Technology in Computer Science Education, Turku, Finland (July 2023).

Associate Program Chair, Position and Curricula Initiatives (PCI), 54th ACM Technical Symposium on Computer Science Education, Toronto, ON (March 2023).

Associate Program Chair, Position and Curricula Initiatives (PCI), 53rd ACM Technical Symposium on Computer Science Education, Providence, RI (March 2022).

Conference Sessions Moderated

Morning Session on June 5, 3rd Annual Illinois Summer Computer Science Teaching Workshop, Champaign, IL (June 2023).

Afternoon Session on August 8, 1st Annual Illinois Summer Computer Science Teaching Workshop, Champaign, IL (August 2021).

Image Compression and Synthesis, *Engineering in Medicine and Biology Society (EMBC)*, 2018 40th Annual International Conference of the IEEE, Honolulu, HI (July 2018).

Oral Presentations

4. **Nowak, M. R.**, Lee, J., & Choe, Y. (July 2019). A Queryable Graph Representation of Vascular Connectivity in the Whole Mouse Brain. Paper presented at the *Engineering in Medicine and Biology Society (EMBC)*, 2019 41th Annual International Conference of the IEEE, Berlin, Germany.

3. **Nowak, M. R.** & Choe, Y. (July 2018). Data-Driven Synthetic Cerebrovascular Models for Validation of Segmentation Algorithms. Paper presented at the *Engineering in Medicine and Biology Society (EMBC), 2018 40th Annual International Conference of the IEEE*, Honolulu, HI.
2. Lim, S., **Nowak, M. R.**, & Choe, Y. (August 2016). Automated Neurovascular Tracing and Analysis of the Knife-Edge Scanning Microscope Rat Nissl Data Set Using a Computing Cluster. Paper presented at the *Engineering in Medicine and Biology Society (EMBC), 2016 38th Annual International Conference of the IEEE*, Orlando, FL.
1. **Nowak, M. R.**, Lozovskiy, A., Dobroskok, D., & Choe, Y. (August 2016). Knife-Edge Scanning Microscopy for *in silico* Study of Cerebral Blood Flow: From Biological Imaging Data to Flow Simulations. Paper presented at the *Engineering in Medicine and Biology Society (EMBC), 2016 38th Annual International Conference of the IEEE*, Orlando, FL.

Poster Presentations

7. **Nowak, M. R.** & Choe, Y. (July 2018). Towards an open-source framework for the analysis of cerebrovasculature structure. Poster session presented at *Engineering in Medicine and Biology Society (EMBC), 2018 40th Annual International Conference of the IEEE*, Honolulu, HI.
6. **Nowak, M. R.**, Han, D., & Choe, Y. (April 2017). Biologically Grounded Synthetic Cerebrovasculature Models for Validation of Segmentation Algorithms. Poster session presented at *2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI)*, Melbourne, Australia.
5. Lee, J., **Nowak, M. R.**, & Choe, Y. (April 2017). Knife-Edge Scanning Microscopy: Towards Full-Scale Analysis of the Cerebrovasculature System of the Whole Mouse Brain. Poster session presented at *2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI)*, Melbourne, Australia.
4. Dobroskok, D., **Nowak, M. R.**, Lozovskiy, A., & Choe, Y. (October 2016). Studying Cerebral Blood Flow *in silico* Using Knife-Edge Scanning Microscopy: From Biological Imaging Data to Basic Flow Simulations. Poster session presented at the *Engineering and Health Science Symposium*, Texas A&M University, College Station, TX.
3. **Nowak, M. R.** & Choe, Y. (August 2016). Learning to Distinguish Cerebral Vasculature Data from Mechanical Chatter in India-Ink Images Acquired using Knife-Edge Scanning Microscopy. Poster session presented at the *Engineering in Medicine and Biology Society (EMBC), 2016 38th Annual International Conference of the IEEE*, Orlando, FL.
2. Choe, Y., Miller, D. E., Shah, R. S., Zhang, W., Yoo, J., Mayerich, D., Kwon, J., Keyser, J., Abbott, L. C., & **Nowak, M.** (February 2016). Enhancing Robustness of Sectioning and Imaging in Knife-Edge Scanning Microscopy. Poster session presented at the *Imaging Science Spotlight Series*, Texas A&M University, College Station, TX.
1. **Nowak, M. R.**, Navia, B., Harezlak, J., Yiannoutsos, C., Guttman, C., Singer, E., Campbell, T., Daar, E., Schifitto, G., & Tate, D. (March 2014). Longitudinal Progression of Cortical Atrophy in HIV-Patients on Stable Treatment. Poster session presented at the *Conference on Retroviruses and Opportunistic Infections*, Boston, MA.

Conference Peer Review Activities

Reviewer, Full Papers Track, 2025 ACM Global Computing Education Conference (CompEd)

Reviewer, Software Engineering Division (SWED), 2025 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Computing and Information Technology Division (CIT), 2025 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Software Engineering Division, 2024 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Computing and Information Technology Division, 2024 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Graduate Studies Division, 2024 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Full Papers Track, 2023 ACM Global Computing Education Conference (CompEd)

Reviewer, Tips, Techniques, and Courseware Track, 2023 Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)

Reviewer, Computing and Information Technology Division, 2023 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Software Engineering Division, 2023 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Tips, Techniques, and Courseware Track, 2022 Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)

Reviewer, Full Papers Track, 2022 Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)

Reviewer, Lightning Talk Track, 2022 SIGCSE Technical Symposium

Reviewer, Software Engineering Division, 2022 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Graduate Studies Division, 2022 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Labs and Experiential Learning Track, 2021 American Society for Engineering Education (ASEE) Illinois-Indiana Regional Conference

Reviewer, Demos Track, 2021 SIGCSE Technical Symposium

Reviewer, Software Engineering Division, 2021 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Graduate Studies Division, 2021 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Software Engineering Division, 2020 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

Reviewer, Graduate Studies Division, 2020 Annual Conference & Exposition of the American Society for Engineering Education (ASEE)

CAMPUS AND DEPARTMENTAL TALKS (UIUC)

Nowak, M. R. (November 2022). Asynchronous daily lessons with interactive activities in CS 128. Supporting Learning and Growth in the Post-COVID-19 Classroom, AE3 Lightning Symposium.

Nowak, M. R. (April 2021). Revising the CS Introductory Programming Sequence. SIIP Session, AE3 Celebration of Teaching.

Nowak, M. R. (March 2021). Interactive daily lessons in CS-128. One Way the Pandemic Has Improved My Teaching, AE3 Lightning Symposium.

DEPARTMENTAL SERVICE (CS/UIUC)

Committee Service

2024-25	Teaching Improvement and Evaluations Committee	Member
2023-24	Educational Computing Committee	Member
2022-23	Undergrad Studies Committee	Member
2022-23	Broadening Participation in Computing Committee	Member
2022-23	Academic Appeals Committee	Member
2021-22	Teaching Evaluation and Improvement Committee	Member
2021-22	Academic Appeals Committee	Member
2020-21	Academic Appeals Committee	Member
2020-21	Instructional Faculty Recruiting	Member

COLLEGE SERVICE (UIUC)

Committee Service

2021-23	Engineering IT Governance Education Working Group	Member
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UNIVERSITY SERVICE (UIUC)

Committee Service

2025-Present	General Education Board	Member
2022-24	Senate Committee on Faculty & Academic Staff Benefits	Member
2022-24	Senate Committee on Educational Policy	Member
2022-24	Senate of the Urbana-Champaign Campus	Senator

PROFESSIONAL SOCIETIES

2019 – present	American Society for Engineering Education (ASEE)
2013 – present	Institute of Electrical and Electronics Engineers (IEEE)
2012 – present	Association for Computing Machinery (ACM)