Anshul Shah

ayshah@ucsd.edu | anshulshah99.github.io | Google Scholar

Education

University of California, San Diego — La Jolla, CA
PhD in Computer Science — *Sept. 2021 – June 2026 (Expected)*
- Thesis Committee: Gerald Soosairaj, Leo Porter, Bill Griswold, Beth Simon
- Dissertation Title: Identifying and Addressing Student Struggles while Working with Large Code Bases

Duke University — Durham, NC
Bachelor of Science in Computer Science and Statistics — *Aug. 2017 – May 2021*

Research Interests

Computer Science Education, Human-AI Interaction, Program Comprehension

Teaching Experience

* Denotes Instructor of Record

***CSE8A: Intro to Programming in Python** | *UC San Diego* — Summer 2025
- Enrollment: 7 students

***CSE190: Working with Large Code Bases** | *UC San Diego* — Spring 2024
- Enrollment: 50 students

CSE190: Working with Large Code Bases | *UC San Diego* — Spring 2025
- Enrollment: 100 students

CSE11: Accelerated Intro to Programming | *UC San Diego* — Fall 2023
- 100% Recommendation Rate (47 responses)
- Enrollment: 600 students

CSE190: Working with Large Code Bases | *UC San Diego* — Spring 2023
- 100% Recommendation Rate (9 responses)
- Enrollment: 50 students

CSE8A: Intro to Programming in Python | *UC San Diego* — Fall 2022
- 100% Recommendation Rate (27 responses)
- Enrollment: 350 students

Data Science with Pandas | *AI4ALL* — Summer 2022
CS216: Everything Data | *Duke University* — Spring 2021
(6x) CS101: Introduction to Computer Science | *Duke University* — Fall 2018 – Spring 2021

Awards

Best Paper Award | *ICER 2025* — 2025
Doctoral Award for Teaching Excellence | *UC San Diego* — 2025
Denardis Memorial Award | *Duke University* — 2021

Funding

* Denotes that I led the ideation, writing, and execution of the grant

***Identifying and Addressing Student Struggles in Large Code Bases ($300,000)** — *Awarded Summer 2024*
- Awarded by the National Science Foundation to investigate student struggles with working on large code bases, including struggles related to program comprehension, code quality, and AI-assisted development.

***Course Development and Instructional Improvement Program ($50,000)** — *Awarded Summer 2023*
- Awarded by UC San Diego for the development of course materials and curriculum redesign of CSE190: Working with Large Code Bases

Service

Reviewer Koli Calling 2025
Reviewer SIGCSE TS 2026
Reviewer ICER 2025
Reviewer, ITiCSE 2025
Reviewer, SIGCSE TS 2025
Reviewer, ITiCSE 2024
Reviewer, SIGCSE TS 2024

Mentoring

PhD Students

- Annapurna Vadaparty
- Francis Geng

MS Students

- Thomas Rexin | *now PhD student @ NC State*

Undergraduate Students

- Gonzalo Allen-Perez | *now MS student @ UCSD*
- Vardhan Agarwal | *now SWE @ Amazon*
- John Driscoll | *now MS student @ UCSD*
- Michael Granado | *now MS student @ Stanford*
- Elena Tomson | *now MS student @ UCSD*
- Steven Shi
- Anya Chernova
- Luis Millan
- Brandon Ngeihm
- Kevin Wu
- Fatimah Alhumrani

Other Mentoring

- Mentor for TA Training Course | *Fall 2024*
- Mentor for TA Training Course | *Winter 2023*
- Mentor for TA Training Course | *Spring 2022*

Textbooks

[1] Anshul Shah and Gerald Soosai Raj. Working with Large Code Bases. Stepik.org. 2024.

Invited Talks

Designing and Implementing the *Working with Large Code Bases* course | *UC Davis* October 2024

Publications

[1] 🏆 **Anshul Shah**, Thomas Rexin, Anya Chernova, Gonzalo Allen-Perez, William G. Griswold, and Adalbert Gerald Soosai Raj. Needles in a Haystack: Student Struggles with Working on Large Code Bases. In *Proceedings of the 2025 ACM Conference on International Computing Education Research V.1*, ICER '25, page 27–40, New York, NY, USA, 2025. Association for Computing Machinery.

[2] **Anshul Shah**, Thomas Rexin, Gonzalo Allen-Perez, Kevin Wu, William G. Griswold, and Adalbert Gerald Soosai Raj. Identifying Students' Code Quality Defects while Contributing to Large Code Bases. In *Proceedings of the 30th ACM Conference on Innovation and Technology in Computer Science Education V. 1*, ITiCSE 2025, page 514–520, New York, NY, USA, 2025. Association for Computing Machinery.

[3] **Anshul Shah**, Thomas Rexin, Fatimah Alhumrani, William G. Griswold, Leo Porter, and Gerald Soosai Raj. An Empirical Evaluation of Active Live Coding in CS1. *ACM Transations on Computing Education*, June 2025. Just Accepted.

[4] **Anshul Shah**, Thanh Tong, Elena Tomson, Steven Shi, William G. Griswold, and Adalbert Gerald Soosai Raj. Students' Program Comprehension Processes in a Large Code Base . In *2025 IEEE/ACM 33rd International Conference on Program Comprehension (ICPC)*, pages 182–193, Los Alamitos, CA, USA, April 2025. IEEE Computer Society.

[5] **Anshul Shah**, Anya Chernova, Elena Tomson, Leo Porter, William G. Griswold, and Adalbert Gerald Soosai Raj. Students' Use of GitHub Copilot for Working with Large Code Bases. In *Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 1*, SIGCSE 2025, New York, NY, USA, 2025. Association for Computing Machinery.

[6] Gonzalo Allen-Perez, Luis Millan, Brandon Nghiem, Kevin Wu, **Anshul Shah**, and Adalbert Gerald Soosai Raj. An Analysis of Students' Testing Processes in CS1. In *Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 1*, SIGCSETS 2025, page 46–52, New York, NY, USA, 2025. Association for Computing Machinery.

[7] Cruz Izu, Claudio Mirolo, Jürgen Börstler, Harold Connamacher, Ryan Crosby, Richard Glassey, Georgiana Haldeman, Olli Kiljunen, Amruth N. Kumar, David Liu, Andrew Luxton-Reilly, Stephanos Matsumoto, Eduardo Carneiro de Oliveira, SeÁn Russell, and **Anshul Shah**. Introducing Code Quality at CS1 Level: Examples and Activities. In *2024 Working Group Reports on Innovation and Technology in Computer Science Education*, ITiCSE 2024, page 339–377, New York, NY, USA, 2025. Association for Computing Machinery.

[8] **Anshul Shah**, Vardhan Agarwal, William G. Griswold, Leo Porter, and Adalbert Gerald Soosai Raj. In-Person vs Blended Learning: An Examination of Grades, Attendance, Peer Support, Competitiveness, and Belonging. In *Proceedings of the 2024 on Innovation and Technology in Computer Science Education V. 1*, ITiCSE 2024, page 422–428, New York, NY, USA, 2024. Association for Computing Machinery.

[9] **Anshul Shah**, Fatimah Alhumrani, William G. Griswold, Leo Porter, and Adalbert Gerald Soosai Raj. A Comparison of Student Behavioral Engagement in Traditional Live Coding and Active Live Coding Lectures. In *Proceedings of the 2024 on Innovation and Technology in Computer Science Education V. 1*, ITiCSE 2024, page 513–519, New York, NY, USA, 2024. Association for Computing Machinery.

[10] **Anshul Shah** and Adalbert Gerald Soosai Raj. A Review of Cognitive Apprenticeship Methods in Computing Education Research. In *Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1*, SIGCSE 2024, New York, NY, USA, 2024. Association for Computing Machinery.

[11] **Anshul Shah**, Jerry Yu, Thanh Tong, and Adalbert Gerald Soosai Raj. Working with Large Code Bases: A Cognitive Apprenticeship Approach to Teaching Software Engineering. In *Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1*, SIGCSE 2024, New York, NY, USA, 2024. Association for Computing Machinery.

[12] **Anshul Shah**, Emma Hogan, Vardhan Agarwal, John Driscoll, Leo Porter, William G. Griswold, and Adalbert Gerald Soosai Raj. An Empirical Evaluation of Live Coding in CS1. In *Proceedings of the 2023 ACM Conference on International Computing Education Research - Volume 1*, ICER 2023, New York, NY, USA, 2023. Association for Computing Machinery.

[13] Mrinal Sharma, Hayden McTavish, Zimo Peng, **Anshul Shah**, Vardhan Agarwal, Caroline Sih, Emma Hogan, Ismael Villegas Molina, Adalbert Gerald Soosai Raj, and Kristen Vaccaro. Engagement and Anonymity in Online Computer Science Course Forums. In *Proceedings of the 2023 ACM Conference on International Computing Education Research - Volume 1*, ICER 2023, New York, NY, USA, 2023. Association for Computing Machinery.

[14] **Anshul Shah**. Improving Students' Programming Processes Using Cognitive Apprenticeship Methods. In *Proceedings of the 2023 ACM Conference on International Computing Education Research - Volume 2*, ICER 2023, New York, NY, USA, 2023. Association for Computing Machinery.

[15] **Anshul Shah**, Vardhan Agarwal, Michael Granado, John Driscoll, Emma Hogan, Leo Porter, William Griswold, and Adalbert Gerald Soosai Raj. The Impact of a Remote Live-Coding Pedagogy on Student Programming Processes, Grades, and Lecture Questions Asked. In *Proceedings of the 2023 Conference on Innovation and Technology in Computer Science Education V. 1*, ITiCSE 2023, New York, NY, USA, 2023. Association for Computing Machinery.

[16] **Anshul Shah**, Michael Granado, Mrinal Sharma, John Driscoll, Leo Porter, William G. Griswold, and Adalbert Gerald Soosai Raj. Understanding and Measuring Incremental Development in CS1. In *Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 1*, SIGCSE 2023, New York, NY, USA, 2023. Association for Computing Machinery.

[17] **Anshul Shah**, Jonathan Liu, Kristin Stephens-Martinez, and Susan H. Rodger. The CS1 Reviewer App: Choose Your Own Adventure or Choose for Me! In *Proceedings of the 26th ACM Conference on Innovation and Technology in Computer Science Education V. 1*, ITiCSE 2021, New York, NY, USA, 2021. Association for Computing Machinery.