KHOI TRINH

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EDUCATION

[E1] University of Oklahoma *Expected Dec 2026*
–Ph.D. in Data Science & Analytics
–GPA: 4.0/4.0
–Advisor: Dr. Anindya Maiti
–Research Focus: AI-generated media, human-AI interaction, and accessibility and equitability in generative AI
–Dissertation (in progress): *Towards Accessibility and Equitability in Generative Artificial Intelligence*
–Key courses: Database Management Systems, Analytics and Metaheuristics, Intelligent Data Analytics

[E2] University of Oklahoma *Dec 2019*
–M.S. in Natural Gas Engineering & Management
–GPA: 3.7/4.0
–Advisor: Dr. Rouzbeh Moghanloo
–Thesis: *Economic Feasibility Study of Several Utilization Alternatives for a Stranded Offshore Gas Reservoir*

[E3] University of Oklahoma *Dec 2017*
–B.S. in Petroleum Engineering
–GPA: 3.3/4.0

RESEARCH EXPERIENCE

[RE1] ScooterLab Aug 2023 - Present
Backend Systems Developer *Norman, OK*

· Develop and maintain a backend API for ScooterLab, an NSF-funded micromobility research project based out of the University of Texas at San Antonio.
· Utilize Python and SQL to optimize data collection and analysis for urban transportation research.

- **Value:** I learned how to work in a collaborative and interdisciplinary environment through building a production-grade internal application programming interface (API).

[RE2] University of Oklahoma - School of Computer Science Jan 2022 - Present
Graduate Research Assistant *Norman, OK*

· Conduct research on AI-generated media and its ethical implications, with a focus on making human-driven workflows more equitable and accessible.
· Utilize machine learning and statistical techniques to assess the impact of generative AI on intellectual property and societal discourse.

- **Value:** I gained experience conducting independent research through literature review, experimental design, collecting and analyzing data, and writing research papers.

TEACHING AND MENTORING EXPERIENCE

[TE1] University of Oklahoma - First Year Learning and Engagement June 2025 - Present
Graduate Teaching Assistant - Instructor *Norman, OK*

· Developed the curriculum and led a section of **Foundations: Academic Support – Math**, mentoring 20–24 students in applying mathematical reasoning to real world scenarios. Guided students in using arithmetic, logic, geometry, statistics, and algebra to interpret data, make informed decisions, and communicate quantitative information effectively.

- **Value:** I gained experience designing inclusive instructional strategies and supporting diverse learners in applying math skills to real-world problems; strengthened my ability to facilitate active learning and build student confidence through regular mentorship and feedback.

[TE2] University of Oklahoma - Ronnie K. Irani Center for the Creation of Economic Wealth Aug 2019 - Dec 2019
Graduate Assistant *Norman, OK*

· Mentored the Oil and Gas Analyst team on a 16-week analysis project of production data from the Austin Chalk, provide help and tutorial in PETRA.

- **Value:** I learned how to support a team with structured feedback through weekly check-ins, and software support.

[TE3] University of Oklahoma - Mewbourne College of Earth and Energy Jan 2018 - Dec 2019
Graduate Teaching Assistant *Norman, OK*

· Integrated Reservoir Management and Production Engineering II: Held office hours to assist an average of 200 students with questions, as well as provided help and tutorial in PETRA.

- **Value:** I strengthened my communication and instructional skills in large classrooms through office hours, review sessions, and weekly check-ins with my supervisor.

STUDENTS CO-MENTORED

- **[S1] Nima Najafian - B.S. in Computer Science - (Aug 2023 - May 2025)**
  - Using Python and SQL to analyze GPS data and detect errors in trip trajectory of the scooter fleet at ScooterLab
- **[S2] Taylor Keller - M.S. in Data Science and Analytics - (Aug 2025 - Dec 2025**
  - Using Python and SQL to optimize data loading time between the Fleet Controller's (FC) backend server and user interface for the Research Activities Management Portal (RAMP) at ScooterLab.
- **[S3] Kristiana Kristiana Karshelieva - B.S and Accelerated M.S. in Computer Science - (Jan 2026 - Present**
  - Using Python and SQL to develop a method to automate adding of new sensors to FC's database via data reported by the the scooter fleet at ScooterLab.
- **Value:** I developed experience in mentoring undergraduate and graduate students to support a collaborative research project through guiding students to identify the cause and propose solutions to ScooterLab's problems with GPS data errors, optimizations, and automation.

SELECTED PUBLICATIONS & PRESENTATIONS

Manuscripts Peer-Reviewed and Published

- **[P1] Prompt and Circumstances: Evaluating the Efficacy of Human Prompt Inference in AI-Generated Art**
  Khoi Trinh, Scott Seidenberger, Joseph Spracklen, Raveen Wijewickrama, Bimal Viswanath, Murtuza Jadliwala, Anindya Maiti
  International Conference on Artificial Intelligence in Music, Sound, Art and Design (EvoMUSART),Toulouse, France, 2026
  Preprint: arXiv:2601.17379
- **[P2] A Picture is Worth a Thousand Prompts? Efficacy of Iterative Human-Driven Prompt Refinement in Image Regeneration Tasks**
  Khoi Trinh, Scott Seidenberger, Raveen Wijewickrama, Murtuza Jadliwala, Anindya Maiti
  International Joint Conference on Artificial Intelligence (IJCAI), Montreal, Quebec, Canada 2025
  Paper: IJCAI 2025 Proceedings
- **[P3] ScooterLab: A Programmable and Participatory Sensing Testbed using Micromobility Vehicles**
  Ubaidullah Khan, Raveen Wijewickrama, Buddhi Ashan M.K., A.H.M. Nazmus Sakib, Khoi Trinh, Christina Duthie, Nima Najafian, Ahmer Patel, R.N. Molina, Anindya Maiti, Sushil K. Prasad, Greg P. Griffin, Murtuza Jadliwala
  IEEE International Conference on Pervasive Computing and Communications (PerCom) Demo Session, Washington D.C., USA 2025
  Preprint: arXiv:2501.06177
- **[P4] Economic Feasibility Study of Several Utilization Alternatives for a Stranded Offshore Gas Reservoir**
  Khoi Trinh, Rouzbeh Moghanloo
  Offshore Technology Conference (OTC), Houston, Texas, USA 2020
  DOI: 10.4043/30732-MS

Manuscripts Under Review

- **[P5] CLPIPS: A Personalized Metric for AI-Generated Image Similarity**
  Khoi Trinh, Jay Rothenberger, Scott Seidenberger, Dimitrios Diochnos, Anindya Maiti

Manuscripts in Progress

- **[P6] Humans, Agents, and the Perfect Prompt: Comparing Iterative Prompt Refinement Performance for Image Regeneration**
  Khoi Trinh, Scott Seidenberger, Anindya Maiti
- **[P7] Node Infrastructure First: Measuring Attacks, Modeling Cascades, and Rapid Recovery Tactics for Public Blockchains**
  Scott Seidenberger, Khoi Trinh, Anindya Maiti

PROFESSIONAL EXPERIENCE & DEVELOPMENT

[PE1] University of Oklahoma Graduate College - Instructional Competencies Certificate Program Advancement Micro-Credential January 2026 - May 2026
Articulation & Actualization Credentials *Norman, OK*

· Engaged and applied instructional skills and best practices in controlled instructional settings through activities such as a one-off learning facilitation experience and peer mentoring group.

- **Value:** I strengthened my academic & instructional skills through various workshops and mentoring opportunities.

[PE2] Mewbourne College of Earth and Energy - Project by Crescent Point Energy May 2017 - July 2017
Summer Intern *Norman, OK*

· Conducted analysis on waterflood project effectiveness in the Uinta Basin using decline curve analysis.

- **Value:** I learned to apply technical knowledge to solve real-world energy problems.

[PE3] Summer Operations Intern June 2016 - August 2016
Summer Operations Intern *Ho Chi Minh City, Vietnam*

· Analyzed gas production data for offshore natural gas fields in Vietnam.
· Reviewed technical process diagrams (PFDs, UFDs, and P&IDs) for operational optimization.

- **Value:** I developed an early understanding of engineering systems' designs and workflows.

ACADEMIC SERVICES

- **[AS1] Hacklahoma:**
  - Member of the Tech team for the 2024 Hackathon.
  - Served as both Judge and Mentor for the 2025 and 2026 Hackathons.
  - Lead workshops including: Spotify streaming data analysis; Introduction to LaTeX; Introduction to R.
- **[AS2] Artificial Intelligence and Machine Learning Club:**
  - Outreach Director for the 2022-2023 academic year.
  - Education co-director for the 2024-2025 academic year.
  - Lead workshops including: Introduction to data collection and machine learning; Spotify streaming data analysis; Hosting your own Stable Diffusion image generation model.
- **[AS3] Data Science and Analytics Club:**
  - Vice President for the 2024-2025 academic year.
  - Coordinate workshops including: Selecting the best database for your project.

TECHNICAL SKILLS

Programming Languages:	Python, R, Java, C++
Data Analysis & Visualization:	pandas, NumPy, Matplotlib, Selenium
Web & API Development:	Flask, FastAPI, RESTful APIs
Automation & Scripting:	Selenium, Bash
Database Technologies:	MySQL, DBeaver, phpMyAdmin
Version Control:	Git, GitHub, Gitea
Operating Systems:	Linux, Windows
Other:	Machine Learning, Data and Statistical Analysis

COMMUNITY ENGAGEMENT

[CE1] Vien Giac Buddhist Temple Summer 2018
Volunteer Guitar Instructor *Oklahoma City, OK*

· Developed and delivered a structured guitar curriculum for beginner students in a community temple setting.
· Created weekly lesson plans covering technique, rhythm, and basic music theory.
· Fostered a welcoming and inclusive environment for young learners of diverse backgrounds.

- **Value:** I gained experience in developing curriculum for beginner learners.

REFERENCES

- Anindya Maiti
  - Assistant Professor in Computer Science
  - University of Oklahoma
  - Relationship: Dr. Maiti is my doctoral advisor and the chair of my Ph.D. committee. He is also a Co-PI for ScooterLab
  - Email: am@ou.edu
- Murtuza Jadliwala
  - Associate Professor in Computer Science
  - University of Texas at San Antonio
  - Relationship: Dr. Jadliwala is a frequent collaborator on my research projects (P1, P2, P3) and a member of my Ph.D. committee. He is also a Co-PI for ScooterLab.
  - Email: murtuza.jadliwala@utsa.edu
- Raveen Wijewickrama
  - Postdoctoral Researcher at ScooterLab
  - University of Texas at San Antonio
  - Relationship: Dr. Wijewickrama is a frequent collaborator on my research projects (RE1, P1, P2, P3).
  - Email: raveen.wijewickrama@utsa.edu
- Buddhi Ashan Mallika Kankanamalage
  - Postdoctoral Researcher at ScooterLab
  - University of Texas at San Antonio
  - Relationship: Dr. Kankanamalage is a collaborator on my research with ScooterLab (RE1).
  - Email: buddhiashan.mallikakankanamalage@utsa.edu