Kenneth (Kira) H. Chan

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Education

Doctor of Philosophy (Ph.D.), Computer Science and Engineering — Dec 2025 - GPA: 4.0
Michigan State University, East Lansing, Michigan
Dissertation Title: Assessing Robustness of AI-based Systems in the Face of Human-based Exploitative Uncertainty
Advisor: Dr. Betty H.C. Cheng

Master of Science (M.S.), Computer Science and Engineering — May 2021 - GPA: 4.0
Michigan State University, East Lansing, Michigan

Bachelor of Science (B.S.), Computer Science and Engineering — May 2019 - GPA: 3.8
Michigan State University Honors College, East Lansing, Michigan

Teaching Experience

Michigan State University | Instructor, *East Lansing, MI* — 2021 - Current

- Course taught: CSE498 (Section 2) Collaborative Design - Secure and Efficient C++ Software Development
- Fostered an active learning environment and provided instructions for assigned courses. This includes designing and developing lecture modules, delivering daily lectures, engaging class discussions, evaluating student work, etc.

Michigan State University | Graduate Teaching Assistant (Level III), *East Lansing, MI* — 2019 - 2025

- Courses taught include: Software Engineering (10 semesters); Distributed Systems (Graduate-level); Web Development; Mobile App Dev.; Object-Oriented Software Dev.; Secure and Efficient C++ Software Development; Discrete Math.
- Presented 100+ guest lectures on various topics, such as AI/ML, software engineering, security, design principles, etc.
- Organized, led, and trained 35+ teaching assistants and undergraduate assistants.
- Assisted, managed, and taught classes with up to 200 students per semester (3,000+ students total).
- Supervised the operations of up to 20 teams (5+ members each) per semester and managed their Git repos.

Professional Experience

Michigan State University | Graduate Researcher, *East Lansing, MI* — 2021 - 2025

- Developed 6 frameworks and techniques to assess and improve the assurance and robustness of DNNs to ensure their correctness in the face of adverse perturbations or uncertainties (human-induced, environmental, etc.).
- Applied technologies from a number of distinct disciplines (e.g., reinforcement learning, evolutionary computing, game theory, goal modeling, etc.) to assess and improve the robustness of DNNs and software by up to 50%.

GeoNexus Technologies | Software Engineering Intern, *Ann Arbor, MI* — 2015

- Designed and developed a prototype application with 3 other interns in Java for Android to extend GeoNexus's geographic information system to visualize work order services on a map for handheld devices for customers.

Selected Publications and Project Experience

- Sol Zilberman, **Kenneth H. Chan**, and B.H.C. Cheng. EvoDriver: Novelty-search driven evolution of behavioral test suites for autonomous vehicles. IEEE 21st Int. Sym. on Software Eng. for Adaptive and Self-Managing Systems, 2025.

- **Kenneth H. Chan**, Sol Zilberman, and B.H.C. Cheng. SavviDriver: Model-based framework for game-based testing of autonomous vehicles in diverse multi-agent traffic scenarios. *Software and Systems Modeling*, 2025.

- **Kenneth H. Chan** and B.H.C. Cheng. EvoAttack: Suppressive adversarial attacks against object detection models using evolutionary search. *Journal of Automated Software Engineering*, vol. 32, no. 3, p. 1–37, 2025.

- **Kenneth H. Chan** and B.H.C. Cheng. Expound: A black-box approach for generating diversity-driven adversarial examples. *International Symposium on Search Based Software Engineering*, pages 19–34. Springer, 2023

**Additional projects, details, and publication information are available on my Google Scholar and website.*

Awards

MSU Summer Research Fellowship *Michigan State University* — Summer 2020-2025
Dr. Delia Koo Global Student Scholarship *Michigan State University* — 2023

Skills

Programming Languages: Python3, C++, C, SQL, TypeScript/JS, Bash, Matlab, Java | **Libraries:** PyTorch, ROS, HuggingFace, NumPy, Pandas, OpenGL, React, TensorFlow, Scikit-learn | **Tools:** Slurm/HPCC, Docker, Git, Linux

**References available upon request.*