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
Title: Assessing Robustness of Artificial Intelligence-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

Professional Experience

Michigan State University | ML / Software Engineering Researcher, *East Lansing, MI* — 2019 - 2025

- Implemented end-to-end pipelines using PyTorch, Hugging Face, and High-Performance Computing to empirically validate and improve the performance and robustness of ML models, leading to an 85% improvement under uncertainty.
- Applied technologies from a number of distinct disciplines (e.g., reinforcement learning, evolutionary computing, game theory, goal models, distributed computing, etc.) to assess and improve the robustness of DNNs / software up to 50%.

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

- Designed and developed a real-time analytics dashboard and mobile application in Java for Android, supporting live map-based visualization for over 2,000 customers to provide real-time updates on work location and information.

Teaching Experience

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

- Course taught: CSE498 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.
- Developed 10 automated testing scripts, data analytics scripts, and statistical reports for quizzes and exams.
- Updated curriculum and classes to incorporate modern technology stacks, including Google Cloud Platform (GCP), Docker, REST API, Flask, Git, etc.

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, 2026.

- **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*, pp. 1-27, 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, pp. 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*, pp. 19–34. Springer, 2023

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

Skills

Programming Languages: Python, C++, C, SQL, TypeScript/JS, Bash, Matlab, Java | **Libraries:** PyTorch, ROS, Hugging Face, NumPy, Pandas, OpenGL, TensorFlow, Scikit-learn | **Tools:** Slurm/HPCC, Docker, GCP, Kubernetes (K8s)
Expertise: Machine Learning, Data Science, Software Engineering, Requirements Engineering, Optimization

**References available upon request.*