

# Kenneth (Kira) H. Chan

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## EDUCATION

<b>Doctor of Philosophy (Ph.D.)</b> , Computer Science and Engineering <i>Michigan State University, East Lansing, Michigan</i>	Dec 2025 - GPA: 4.0
Title: Assessing Robustness of Artificial Intelligence-based Systems in the Face of Human-based Exploitative Uncertainty	
Advisor: Dr. Betty H.C. Cheng	
<b>Master of Science (M.S.)</b> , Computer Science and Engineering <i>Michigan State University, East Lansing, Michigan</i>	May 2021 - GPA: 4.0
<b>Bachelor of Science (B.S.)</b> , Computer Science and Engineering <i>Michigan State University Honors College, East Lansing, Michigan</i>	May 2019 - GPA: 3.8

## PROFESSIONAL EXPERIENCE

<b>Michigan State University</b>   ML / SOFTWARE ENGINEERING RESEARCHER, <i>East Lansing, MI</i>	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 modeling, etc.) to assess and improve the robustness of DNNs and software by up to 50%.	
<b>GeoNexus Technologies</b>   SOFTWARE ENGINEERING INTERN, <i>Ann Arbor, MI</i>	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

<b>Michigan State University</b>   INSTRUCTOR, <i>East Lansing, MI</i>	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.	
<b>Michigan State University</b>   GRADUATE TEACHING ASSISTANT (LEVEL III), <i>East Lansing, MI</i>	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.	

## 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, React, TensorFlow, Scikit-learn | **Tools:** Slurm/HPCC, Docker, Git, Linux

**Expertise:** Machine Learning, Data Science, Software Engineering, Requirements Engineering, Optimization, REST API

\*References available upon request.