Kenneth (Kira) H. Chan

: (734) 635-4028 : chanken1@msu.edu : https://cse.msu.edu/~chanken1 : linkedin.com/in/kira-chan-20 U.S. Citizen

Education:

Ph.D. - Computer Science and Engineering, Michigan State University, East Lansing, MI Exp. May 2026 - GPA: 4.0
Research Focus: Addressing the assurance and trust of learning enabled systems for software engineering
Advisor: Dr. Betty H.C. Cheng

M.S. - Computer Science and Engineering, Michigan State University, East Lansing, MI May 2021 - GPA: 4.0

B.S. - Computer Science and Engineering, Michigan State University Honors College, East Lansing, MI May 2019 - GPA: 3.76

Selected Publications and Project Experience:

Kenneth H Chan and B.H.C. Cheng. EvoAttack: Suppressive adversarial attacks against object detection models using evolutionary search. *Journal of Automated Software Engineering*, In press, Oct. 2024.

Kenneth H Chan, Sol Zilberman, Nick Polanco, Joshua E Siegel, and B.H.C. Cheng. SafeDriveRL: Combining non-cooperative game theory with reinforcement learning to explore and mitigate human-based uncertainty for autonomous vehicles. *In Proc. of the 19th Int. Sym. on Software Eng. for Adaptive and Self-Managing Systems (SEAMS),* Lisbon, Portugal, pages 214–220, 2024.

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

Michael Austin Langford, **Kenneth H Chan**, Jonathon Emil Fleck, Philip K McKinley, and B.H.C. Cheng. MoDALAS: addressing assurance for learning-enabled autonomous systems in the face of uncertainty. *J. Software and Systems Modeling*, pp.1–21, 2023.

Kenneth H Chan and B.H.C. Cheng. EvoAttack: An evolutionary search-based adversarial attack for object detection models. *In Proceedings of the 14th IEEE Symposium on Search-Based Software Engineering*, Singapore, 2022.

Michael Austin Langford, **Kenneth H Chan**, Jonathon Emil Fleck, Philip K McKinley, and B.H.C. Cheng. MoDALAS: Model-driven assurance for learning-enabled autonomous systems. *In Proceedings of MODELS 2021: ACM/IEEE 24th International Conference on Model Driven Engineering Languages and Systems*, pages 207–216, Online (due to COVID-19), 2021.

Kenneth H Chan, Matthew Pasco, and B.H.C. Cheng. Towards a blockchain framework for autonomous vehicle system integrity. *SAE International Journal of Transportation Cybersecurity and Privacy*, 2021.

Professional and Project Experience:

Graduate Researcher, 2021 - Current **Michigan State University - East Lansing, MI**

- Developed techniques to address / improve the assurance and robustness of DNNs to ensure their correctness in the face of adverse perturbations or uncertainties (human-induced, environmental, etc.).

Software Engineer (Student Capstone Project), 2018 **Volkswagen - Auburn Hills, MI**

- Designed and developed a demo phone application for Android and iOS which introduces potential customers to VW's connected interactive phone car services and familiarized existing customers with new system features.

Software Engineer (Intern), Summer 2015 **GeoNexus Technologies - Ann Arbor, MI**

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

Teaching Experience:

Graduate Teaching Assistant, 2019 - Current (16 semesters) **Michigan State University - East Lansing, MI**

Courses: CSE435 Software Engineering (8 semesters); CSE812 Distributed Systems (Graduate-level); CSE477 Web Development; CSE476 Mobile App Development; CSE335 Object-Oriented Software Development; CSE260 Discrete Mathematics.

- Created 35+ assignments, projects, and exams designed to transform concepts into practical application.
- Presented 6 guest lectures on machine learning, DNNs, software engineering, and computer security.
- Organized, led, and trained 35+ teaching assistants and undergraduate assistants.
- Assisted, managed, and taught classes with up to 200 students per semester (2,000+ students total).

Selected Honors and Awards:

Dr. Delia Koo Global Student Scholarship and Chinese Student Endowment - 2023 $5,000
Auto-Owners Exposition Award - 2018
Blue Oval STEM Scholarship (Ford Motor Company) - 2015-2019 $2,500 - Renewable for 4 Years

Skills:

Languages: Python, Java, C/C++, HTML/CSS, JavaScript, Shell/Bash, PHP, SQL, Latex **Systems**: Linux/Unix, Windows
Tools: PyTorch, pandas, TensorFlow, SVMs, Big Data, DNNs, Hugging Face, Scikit-learn, Image Classification, Object Detection
**References available upon request*