

# Kenneth (Kira) H. Chan

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## 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, Bash, PHP, SQL, Latex

**Systems:** Linux/Unix, Windows

**Tools:** PyTorch, pandas, TensorFlow, SVMs, Big Data, DNNs, Hugging Face, Scikit-learn, NumPy, Docker, Slurm/HPCC

\*References available upon request