

# Kevin Lee

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## EDUCATION

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### **Purdue University, College of Science**

Master of Science in Computer Science

Aug. 2020 - May 2023

West Lafayette, IN

### **The Ohio State University, College of Engineering**

Bachelor of Science in Computer Science and Engineering

Aug. 2014 - May 2020

Columbus, OH

## PROFESSIONAL EXPERIENCE

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### **Purdue University**

Department of Computer Science

Aug. 2020 - May 2023

West Lafayette, IN

*Graduate Teaching Assistant* | Professor: Jeffrey A. Turkstra, PhD

- Assisted professor in a Software Development in C class with over 400 students.
- Collaborated with the instructional team to design homework and exam problems, ensuring alignment with course objectives and enhancing student learning outcomes.
- Conducted lab sessions, office hours, and virtual help sessions to provide personalized support and guidance to students, fostering a conducive learning environment.
- Received positive feedback from students for approachability, assistance, and dedication to their learning experience.

### **The Ohio State University, Wexner Medical Center**

Department of Obstetrics and Gynecology

May 2019 - May 2020

Columbus, OH

*Research Assistant* | Advisor: Douglas Danforth, PhD

- Contributed to Virtual Patient research, aimed at enhancing medical students' training for doctor-to-patient conversations.
- Updated and maintained Speech to Text and Text to Speech components using Unity, C#, and Java, enhancing the functionality and usability of the software.
- Collaborated with professionals from diverse backgrounds in the medical and natural language processing field, gaining interdisciplinary teamwork skill and research experience.

### **The Ohio State University**

Department of Computer Science and Engineering

Jan. 2019 - May 2019

Columbus, OH

*Undergraduate Teaching Assistant* | Professor: Larry King

- Supported professor in a Software Development Java class with over 40 students.
- Demonstrated strong communication skills by providing clear explanations and offering additional support to students during office hours and lab sessions.
- Effectively evaluated and graded projects and homework assignments, providing constructive feedback to students to aid in their learning process.

## **PUBLICATIONS**

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*Artificial intelligence in virtual standardized patients: Combining natural language understanding and rule based dialogue management to improve conversational fidelity.*

Maicher, K. R., Stiff, A., Scholl, M., White, M., Fosler-Lussier, E., Schuler, W., Lee, K., & Danforth, D. R. et al. (2022). Medical teacher, 1–7. Advance online publication.

<https://doi.org/10.1080/0142159X.2022.2130216>

## **PROJECTS**

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### **Virtual Patient Project**

May 2019 - May 2020

<https://accad.osu.edu/research-gallery/virtual-patient-project>

- Assisted in Virtual Patient research for OSU medical students, utilizing Unity 3D, Speech to Text, Neural Networks, and Text to Speech technologies.
- Collaborated on the development of an AI system for Virtual Standardized Patients (VSPs), integrating Automated Speech Recognition, hybrid AI, and automatic speech generation.
- Analyzed data from 620 first-year medical students, demonstrating a significant improvement in system accuracy to approximately 90% by 2021.

### **Backdoor Attack on Language Model Code Generators**

Feb. 2023 - May 2023

<https://github.com/kevindclee/Backdoor-Attack-on-Language-Model-Code-Generators>

- Contributed to a project at Purdue aimed at exploring the insertion of trigger words into Large Language Models for Code Generation to generate malicious code for potential backdoor attacks on user's computers.
- Developed web scraping code to gather training data for the GPT-2 code generator model and implemented trigger insertion code using Python to experiment with the insertion of trigger words into the models, streamlining the research process.
- Collaborated with team members to execute various aspects of the project, including data collection, code implementation, and experimentation, ensuring comprehensive coverage of research objectives.

## **INVOLVEMENT**

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### **Google, Machine Learning Bootcamp**

Seoul, South Korea / Sep. 2023 - Dec. 2023

- Acquired skills in deep learning, computer vision, and natural language processing.
- Gained knowledge of TensorFlow and completed Kaggle competition with top 7%.
- Gained hands-on experience in ResNets, MobileNet, YOLO, U-Net, and Transformer Network.

### **En-core, Playdata Bootcamp**

Seoul, South Korea / May 2022 - Dec. 2022

- Acquired comprehensive skills in front end and back end development, as well as artificial intelligence applications, during enrollment in the Playdata Bootcamp at En-core.
- Demonstrated proficiency in a range of technologies including JavaScript, React, Next.js, Spring Boot, MySQL, and Python, expanding technical expertise and versatility.
- Developed strong leadership skills through team leadership and project presentations, enhancing collaboration and communication abilities in technical environments.

## **QUALIFICATIONS & SKILLS**

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- Proficient with:
  - Front-end frameworks like React, Material UI, Tailwind CSS.
  - Back-end frameworks including Node.js and Java (with Spring and SpringBoot).
  - AI/ML frameworks such as Python, including PyTorch, TensorFlow, scikit-learn, Numpy, Pandas, and Keras.
  - Programming languages such as Java, C, Python.
  - Databases like MySQL and Neo4j.
  - Cloud platforms such as Google Cloud Platform and Microsoft Azure.
- Bilingual: Korean (fluent), English (fluent), Japanese (intermediate)