kenchoi.dev

Kenneth Choi

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EDUCATION

Massachusetts Institute of Technology

EXPECTED MAY 2025

Candidate for B.S. in Computer Science and Engineering and B.S. in Mathematics. GPA: 5.0/5.0

Relevant Coursework: Distributed Computer Systems (6.824), Algorithms I & II (6.046, 6.006), Software Construction (6.031), Machine Learning (6.036), Natural Language Processing (6.864), Computer Vision (6.819), Computation Structures (6.004), Computer Systems (6.033), Probability and Random Variables (18.600), Linear Algebra (18.06)
Current: Software Performance Engineering (6.172), Operating System Engineering (6.039), Database Systems (6.830)

SKILLS

Programming: Python, Typescript, Go, Java, Swift, Git, LaTeX
Web Development: React, Node.js, Express.js, MongoDB, HTML/CSS
Machine Learning and Data Analysis: PyTorch, TensorFlow, NumPy, MATLAB
Other Tools: Appium, AWS (S3, Lambda, Device Farm)
Foreign Languages: Korean (professional), Spanish (familiar)

WORK EXPERIENCE

MIT web.lab, *President, Academic Chair, Lecturer* OCT 2022 - PRESENT

- Coordinating all operations for the 2024 MIT web.lab web development class and competition
- Developing curriculum, giving lectures, hosting code workshops, running office hours, judging projects, recruiting staff, and communicating with sponsors and administration
- Organized successful year of web.lab (2023) with over 400 enrolled students, over 80 projects, and $20,000 in prizes

Amazon, *Software Development Engineer Intern* JUN 2023 - AUG 2023

- Developed two Amazon Lens benchmarking solutions that automate data collection from competitor apps more than 80 times faster than the existing solution, using 1) API requests and 2) mobile device UI automation with AWS Device Farm
- Designed and implemented an interface that replicates both confidential and public data from multiple S3 input sources into a common training bucket for researchers

MIT DINaMo Research Group, *Undergraduate Researcher* MAY 2022 - MAY 2023

- Designed a multi-agent reinforcement learning (MARL) algorithm for partial observability in a collaborative environment
- Implemented training optimizations for our graph neural network-based MARL algorithm in navigation environments
- *Scalable Multi-Agent Reinforcement Learning through Intelligent Information Aggregation* published at ICML

Research Science Institute, *Teaching Assistant* JUL 2021 - AUG 2021

- Organized 1:1 oral presentation sessions with student researchers in computer science and physics
- Advised 3 of the Top 5 Oral Presenters

Facility for Rare Isotope Beams (FRIB) Lee Research Group, *Researcher* MAY 2020 - SEP 2021

- Designed the rodeo algorithm, a quantum computing algorithm that accurately reconstructs any eigenvector of a quantum Hamiltonian given an energy interval
- *Rodeo Algorithm for Quantum Computing* published by Physical Review Letters

PROGRAMMING PROJECTS

Fortuna, *fortuna-2022.herokuapp.com* JAN 2022

- Developed an online casino with multiplayer games and user ability to mint custom NFTs in an Ethereum testnet
- Implemented multiple pages front-to-back (e.g. slots, home, map) using the MERN stack
- Won 1st place and Gather Innovation Prize at the 2022 MIT Web Lab Competition (team of 3)

Voice Reader with Icon Detection, *github.com/chigkim/VOCR/tree/PPAT22* SEP 2022 - DEC 2022

- Implemented a music icon detection feature in a macOS voice reader that uses optical character recognition (OCR)
- Integrated OpenCV contour detection and TensorFlow CNN into a Python backend, then connected the backend to Swift
- Worked with Berklee Prof. Chi Kim, as part of MIT's Principles and Practice of Assistive Technology class (team of 3)

AWARDS

- 1st place at MIT web.lab Competition (2022)
- Research Science Institute (RSI) Top 5 Paper (2020)
- Regeneron Science Talent Search Scholar (2021)
- American Invitational Math Exam Qualifier (3x)

LEADERSHIP EXPERIENCE

- Lab Assistant for Software Construction (6.031)
- Events Chair for MIT Science Olympiad
- Relations Chair for MIT Korean Cultural Association