

# Kuo, Nai-En

<https://imgradually.github.io/>

Email : [n1kuo@ucsd.edu](mailto:n1kuo@ucsd.edu)

Mobile : +1(909)616-9505

## EDUCATION

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- **University of California, San Diego** La Jolla, CA  
*Master of Science in Computer Science and Engineering; GPA: 4.0/4.0 (Credit: 24)* Sept. 2023 – Jun. 2025
- **National Yang Ming Chiao Tung University** Hsinchu, Taiwan  
*Graduate study in Network Engineering; GPA: 4.25/4.3 (Credit: 21)* Feb. 2021 – July. 2022
- **National Chiao Tung University** Hsinchu, Taiwan  
*Bachelor of Science in Computer Science; GPA: 3.67/4.3 (Credit: 138)* Sept. 2017 – Jan. 2021

## EXPERIENCE

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- **Taiwan Semiconductor Manufacturing Company(TSMC)** Hsinchu, Taiwan  
*Information Technology Intern* July 4, 2022 - Sept. 2, 2022
  - **System Migration:** I migrated a system from virtual machine to **Kubernetes**-based system OKD.
  - **Job Dispatching Solution:** I developed a job dispatching service utilizing **Java Spring Boot**, incorporating **CI/CD** and **unit testing**, effectively managing bottleneck situations in the production environment.
- **DBS Bank, Taiwan** Taipei, Taiwan  
*Information Technology Contractor* July 2020 - Jan. 2021
  - **Real-time speech emotion recognition:** Proof-of-concept implementation of transfer learning using **Pytorch**
  - **Talent Data Collector:** Web-baesd talent data collector and report generator using **Selenium** and **Pandas**.
  - **Phone dialing Line Chatbot:** A **Flask** web application that was built on **Heroku** with **PostgreSQL** database that helps you make a instant phone call through **Twilio** on a widely used instant messaging app **Line**.

## COMPETITIONS

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- **2021 Microsoft x TSMC IT CareerHack** Online  
*In 24 hours, we made a **mixed reality** cooking simulator on **HoloLens** with **Unity**: Github repo* Jan. 24-25, 2021
- **2020 ICPC Asia Taipei-Hsinchu Site Programming Contest** Taipei, Taiwan  
*Bronze medal, Team name: NCTU-KokushiMusou, my ICPCID: C300DHLH34B2* Nov. 07, 2020
- **2020 Mei-Chu Hackthon** Hsinchu, Taiwan  
*3rd place. We made a tweet sharing application based on LINE Front-end Framework: Github repo* Oct. 24-25, 2020

## PROJECTS

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- **Recommender System:** Implementation of Bayesian Personalized Ranking and Latent-factor Model using Keras.
- **Haskell Snake Game:** A double player snake game programmed with functional programming language **Haskell**.
- **Multifunctional Aerial Gazer:** Face tracking drone (DJI Tello EDU) using OpenCV, TensorFlow and MediaPipe for face detection, head pose estimation and hand gesture recognition.
- **SAT solver:** C++ implementation of CDCL-based heuristic alorithm to solve **SAT** (NP-complete) problem.
- **Compiler:** It's implemented in lex, Bison, and C++. It generates RISC-V **assembly** for a P program.

## PROGRAMMING SKILLS

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- **Languages:** Python, C/C++, Java, Javascript, PHP, Haskell, HTML/CSS, SQL, P4
- **Tools:** Kubernetes, Git, Spring Boot, Azure, Unity, Linux, Docker, GCP, AWS, Heroku, Selenium, IBM Qiskit

## PUBLICATION

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- **S.Y. Wang and N.E. Kuo.** Using programmable p4 switches to reduce communication costs of parallel and distributed simulation: In 2022 IEEE Globecom, 2022.
- **N.-E. Kuo, Y.-C. Chu, and R.-J. Chen.** Quantum computation and shallow circuit experiment: In Proceedings of the 37th Workshop on Combinatorial Mathematics and Computation Theory, 2020.