Jie-Ying (Jay) Lee

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EDUCATION

- **National Yang Ming Chiao Tung University** — Hsinchu, Taiwan
  B.S. in Computer Science; GPA: 4.23/4.3 (Overall), 4.26/4.3 (Major) — *Jul. 2021 - Present*
  Courses: *Computer Vision for UAV Autopilot, Introduction to A.I., Introduction to ML, Introduction to Image Processing, Competitive Programming I, Theory of Computer Games, Probability, System and Network Administration*

EXPERIENCES

- **CompPhoto Lab** — Python, NeRF, 3D Generative AI, Scene Generation
  Research Assistant and System Administrator — *Aug. 2023 - Present*
  Advised by Prof. Yu-Lun Liu. Conducting a research using NeRF and NeuS to generate realistic 3D unbounded scene.
- **Microsoft** — Aether, jQuery
  Research & Development Intern at Bing Geocoding — *Sep. 2023 - Present*
  Integrated code in backend component, made it able to populate new data format and displayed the them in dashboard. Also refined the dashboard to make it more useful for engineers and scientists.
- **IT Center of Department of Computer Science, NYCU** — Linux, Kubernetes, PHP, Laravel, Vue, CI/CD, GitLab flow
  Teaching Assistant of WWW and System Group — *Jul. 2022 - Present*
  Developed the backend of teaching assistant contact information system using PHP and Laravel. And learned how to design the database schema and write RESTful API, also used OpenAPI to write API document. Also be familiar with the process of software development, including git version control, merge requests and CI/CD.
- **Appier** — MongoDB, Trino, Argo Workflow, Kubernetes, GCP, BigQuery, Looker Studio, Agile, System Design
  Backend Engineer Summer Intern — *Jul. 2023 - Sep. 2023*
  Developed a novel system to calculate and visualize the cloud service costs for each customer per feature, which replaced the traditional manual estimation. By automatically collecting and calculating cost, it achieving 7200x speedup. Utilized Google Cloud Storage and Looker Studio for visualization. Developed in collaboration with the team's Scrum process. Also engaged with Product Managers and sales teams to ensure it meets their expectations.

PUBLICATIONS

- **BoostMVSNeRFs: Boosting MVS-based NeRFs to Generalizable View Synthesis in Large-scale Scenes**:
  Chih-Hai Su*, Chih-Yao Hu*, Shr-Ruei Tsai*, **Jie-Ying Lee***, Chin-Yang Lin, Yu-Lun Liu (* denotes equal contribution)
  BoostMVSNeRFs aims to enhance the rendering quality of MVS-based NeRFs in large-scale scenes. Our method significantly improves the rendering quality in large-scale scenes and unbounded outdoor scenes. *This work is currently under review at SIGGRPAH 2024.*

PROJECTS

- **VAE-pix2pix-terrain-generator (Python, PyTorch, GAN, Unity, Web Development)**: Used NASA's SRTM 1 Arc-Second dataset to collect altitude maps and MapTiler to collect corresponding satellite images from around the world. The collected images are used to train a VAE-pix2pix model, which is an VAE combined with pix2pix. The model adds realistic details to the heightmap and generates corresponding satellite images. Link (Jul. 2020)
- **C++ Implementation of Root-parallelization MCTS (C++, MCTS, AI, Parallel Programming)**: Project for theory of computer games. Implemented a root-parallelization multi-thread MCTS algorithm for NoGo game. It can be also applied in various of games, like Go, Hex, etc. Link (Jan. 2023)
- **Camp Management System (Vue.js, Nuxt.js, Vuetify.js, PostgreSQL, Python, Django)**: The final project for the introduction to database system course. Designed to manage applicant data and support multiple reviewers in evaluating applicant information and assigning scores. Using Nuxt and Vuetify to create a modern-looking frontend. Also used Django as the backend to create a RESTful API server. Link (Jan. 2023)
- **UbikeAnywhereBot (Python, API, Crawler)**: A Telegram Bot for Ubike route planning. The Bot first asks the user for their starting point and destination, and uses the PTX API provided by the government to obtain the names, coordinates, available bikes, and available spaces of all Ubike stations in Taiwan. Link (Jul. 2019)

AWARDS

- **Marconix Award of 19th Marconix Science Award**: Top award in Macronix Science Award. The only recipient within ten years.
- **Second Place in 60th National Primary and High School Science Fair**: Awarded the best work at the 60th national science fair (The first place is absent) out of 8 all participants who are the first place from cities in Taiwan.
- **Bronze Award of The 2022 ICPC Asia Taoyuan Regional Programming Contest**: Thirty-second place out of 100 teams. Second place of the bronze award.
- **Academic Achievements Award in 2021 Fall Semester**: Top 5% in the class.
- **Fundamental Course Award of Discrete Mathematics, Digital Circuit Design, Data Structures & Object-oriented Programming and Introduction to Algorithms**: Top 5% of these courses.

Extracurricular Activities

- **NYCU Taoyaun Association**
  President   *Jul. 2022 - Jul. 2023*
  Led 60 members from various of departments in NYCU to organized welcoming camp, campus tour for over 50 students from Taoyaun, Yunlin and Chiayi. By engaging in activity preparation, I acquired the skills to effectively communicate and collaborate with individuals from diverse backgrounds.

- **SITCON 2022 Agenda Committee**
  Member   *Mar. 2022 - Sep. 2022*
  Organized events and review agendas at SITCON (the largest student information conference in East Asia), also responsible for organizing the forum that delved into the issues of information education in Taiwan.