Jialuo (Eric) Chen

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Education

University of Toronto **September 2022 – May 2027**

Bachelor of Applied Science and Industrial Engineering with PEY-COOP *Toronto, ON*

- **Minor**: Computer Science, Artificial Intelligence Engineering, Engineering Business
- **Relevant Courses**: Data Structure and Algorithm, Machine Learning, Deep Learning, Data Analysis, Database Management System, Object Oriented Programming, System Design, Operational Research, Programming Architecture, Version Control Systems, Designn Pattern

Technical Skills

Programming: Python, Java, C, HTML/CSS, JavaScript, TypeScript, SQL, SPARQL R, Matlab, Shell Scripting
Technologies: Git, Github, Linux, Spring Boot, MYSQL, PostgreSQL, Pytorch, Tensorflow, Figma, React, Bootstrap, Node.js, JQuery, JDBC, Hibernate, JPA, Datalog, JUnit, Jest, XML, RESTful API.
Concepts: Clean Architecture, SOLID Principles, Design Pattern, UML, Test Driven Development, Responsive Design, Communication, Team Work, Problem-Solving, Collaboration, Leadership, Microsoft 365

Experience

Centivizer **May 2024 – August 2024**

Front-End Developer *Toronto, ON*

- Applied **JavaScript** with **React** to update the whack-a-mole game's front-end, increasing user click accuracy by 1.8%.
- Refined **Node.js, WSL, MySQL**, and **Redis** to configure the development environment to enable **back-end API** link update, which accomplished seamless integration between the front-end and evolving back-end infrastructure.
- Leveraged JavaScript to implement a participant number input field, optimizing user identification and enhancing data tracking capabilities by 12.7% within the game's **User Interface** (UI).

Hangzhou Cellinemory Brand Management Co., LTD **May 2023 – July 2023**

Technology and Operation Intern *Hangzhou, China*

- Revamped the company's Shopify account by updating the **visual design** and **domain**, elevating brand identity.
- Tuned hyperparameters in **Stable Diffusion** to train on 30+ images of Korean stars, achieving an 8% improvement in image quality for product visualization.

Projects

Accounting System link | *Java, Clean Architecture, OOP, HTML, CSS, JavaScript, React, Git* **July 2024 - Present**

Co-Leader

- Applied **UML** and **Clean Architecture** to develop an accounting system supporting real-time transaction management, enabling simultaneous updates for multiple users through an innovative joint account feature.
- Developed a responsive **front-end UI** using **HTML, CSS, JavaScript, and React** to handle user interactions with reusable components, enhancing user experience and improving code maintainability.
- Leveraged **SOLID principle** by applying Java **OOP** and **encapsulation** to handle user authentication, transaction processing, and automated periodic updates, which created a modular, maintainable, and extendable code base.
- Exploited **Java Spring Boot** to implement **dependency injection** and develop robust **RESTful APIs**, enabling stable communication between front-end and back-end systems, which enhanced system scalability and maintainability.
- Applied **JUnit** for **unit testing** to achieve 70%+ test coverage in the application layer and 90%+ in the business layer, enhancing system stability and resolving edge cases early.

Course Management System | *Java, SQL, Hibernate, JPA, OOP, Git* **October 2024 - November 2024**

- Leveraged **JPA** and **Hibernate** to establish a reliable connection between the database and Java application, enabling efficient and accurate management of engineering department course information.
- Executed native **SQL** queries to manipulate the database and analyze course statistics into CSV files, providing valuable insights into course information for future use.

LineToLive SketchToFace GAN link | *Python, Pytorch, Jupyter, Deep Learning* **June 2024 - August 2024**

- Designed a custom **GAN** with **U-Net** and **PatchGAN**, trained on human sketch-photo pairs, to enhance face generation for **criminal investigations** by balancing discriminator accuracy and generator refinement.
- Refined PyTorch for data augmentation on 2520 images, improving model generalization across diverse facial features.
- Implmented a **3-generator architecture** to decompose tasks into face structure, colorization, and balancing, enhancing image quality by 25.1% (L1) and 16.2% (L2) compared to the baseline model, resulting in clearer outputs.

Traveling Salesman link | *Java, OOP, Network, Optimization, Algorithm* **October 2023 - December 2023**

- Engineered a robust **deterministic network model** using Java's **Object-Oriented Programming** methodology to simulate every possible traveling path and cost based on data from over 20 text files.
- Implemented improved **greedy algorithms** (Nearest Neighbor, Nearest Neighbor First-Last, Node Insertion) to optimize traveling paths among 1000+ nodes, achieving a 20+% reduction in computation time compare to example.