Yihao(Ricky) Wang

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EDUCATION

Carnegie Mellon University | GPA: 3.77/4.0   Pittsburgh, PA

Master of Science in Electrical and Computer Engineering   *12.2022*

Core courses: Machine Learning, Deep Learning, Computer Systems, Java for Application Programmers,

Imperial College London   London, UK

Master of Science in Communications and Signal Processing with Merit   *10.2021*

University of Birmingham | GPA: 4.25/4.25   Birmingham, UK

Bachelor of Engineering in Electrical Engineering with Honors, First Class   *7.2020*

University of Electronic Science and Technology of China | GPA: 3.89/4.0   Chengdu, China

Bachelor of Engineering in Optics Engineering   *7.2020*

PROJECTS

Multi-participant Interaction in Virtual Reality and Motion Sensing *CMU*   *1.2022 – 5.2022*

- Developed a multi-user virtual reality application using C# in Unity and Photon, deployed on the Oculus Quest 2. The project aims to simulate ECMO surgery training in a collaborative VR environment, providing an effective alternative when physical equipment is limited.

Dynamic Storage Allocator (Malloc) *CMU*   *9.2021 – 11.2021*

- Built a dynamic allocator based on **C** language utilizing explicit free list and selected segregated fits to maintain an array of free lists; Adopted the better-fit policy and LIFO policy to improve memory utilization to 74.4%.

Black-box Adversarial Attacks for Quantized Image Classifier *Imperial College London*   *1.2021 – 3.2021*

- Developed a Dense One-pixel attack method using **Python** and **TensorFlow** and Differential Evolution algorithm to attack image classifiers. Increased the attack success rate by 13%; Designed **metric calibration** and identified a new method that improved query efficiency by 53%.

Automatic Transcription of Ornamented Irish Flute Music *CMU*   *10.2019 – 4.2020*

- Unlike traditional spectral domain approaches that rely on signal energy, we modified the baseline CNN model to better accommodate the characteristics of flute music, achieving a 30% improvement in accuracy. Additionally, to address the limitations of a small training dataset, we applied **transfer learning techniques**, which further improved accuracy by 0.5%.

Intelligent Wire Tracking Vehicle *University of Birmingham*   *1.2019 – 5.2019*

- Built an amplifying circuit with SSM 2019. Realized analog signal collection and digital signals conversion and processing with a quadrature filter installed by PIC 18F27K40. Controlled wheel speed by PWM wave ratio.

SKILLS

Programming: Java, Kotlin, C#, Python, Golang, C, HTML   **Framework:** Maven, Spring Boot, Gradle, CSS
Tools: Git, Docker, Spinnaker, PySpark, Datadog, Splunk, Kubernetes, Postman, Jupyter Notebook, Unity

WORK EXPERIENCE

Expedia Group   Seattle, US

Software Development Engineer II, Search Orchestration Team   *12.2024 – present*

♦ I worked on the Search Orchestration team, maintaining distributed systems that enabled fast, reliable search experiences for Expedia.com, Hotels.com, and Vrbo.com. I focused on low-latency orchestration, infrastructure resilience, and system stability, and collaborated closely with PMs and TPMs to deliver critical search capabilities at scale.

Software Development Engineer, Search Relevance Team   *1.2023 – 12.2024*

♦ Implemented a shadow orchestrator in the post-processing service in Expedia Ranking for conducting pre-production tests of **all machine learning features**; Designed and set up the **CI/CD pipeline** for the shadow test and set the contribution guidelines as the key engineer of this new feature.

♦ Completed A/A test and integrated personalization SDK to enhance system performance. Led the deprecation of a legacy service for consistency. Redesigned the calling method of the post-processing service to promote independence and efficiency of ranking team's service. Acted as the primary **POC** for a key service returning final sorted properties, fostering collaboration with the machine learning team.

♦ Collaborated with Ads team and migrated the auction function to the ranking service with GP of $4.55 million.

♦ Launched the post-processing service for brands Expedia and HCOM which returned the final ranking list of properties for real-traffic requests; As the **top 2** contributors to this post-processing service, collaborated with Machine Learning Scientists, took charge of the LODO work and accomplished platform migration.

♦ Documented the **E2E debugging process** and presented it to the Expedia Search team and Machine Learning team and it has been reviewed **1k+ times**; Drafted the **on-call playbook** for new team members and actively participated in on-call duties; Collaborated with Product Manager and presented the search 101 tech talk to EG Search leadership team and it summarized the scope of EG Search and can be regarded as a high-level overview.

Software Development Engineer Intern, Conversational Platform Team   *5.2022 - 7.2022*

♦ Designed and developed existing **Virtual Agent** (VA) skills using **Kotlin** with a focus on the conversation starter skill; Created new message templates of automatic replies and declarative cards.

♦ Created a new skill of VA related to flight information using **Java**, having a predictable impact on future products. Made calls to different services and set up the proxy to fetch required information. Added the slot filling function and collected key information within conversation scope when users are chatting with VA.

HONORS

♦ Outstanding Graduate at UESTC (2020, Top 5%) University of Electronic Science and Technology of China
♦ Engineering Undergraduate Prize (2019, Top 2)   University of Birmingham
♦ Tang Li-Xin Scholarship (2018, Top 1%)   University of Electronic Science and Technology of China
♦ China National Scholarship (2018, Top 1%)   University of Electronic Science and Technology of China
♦ China National Scholarship (2017, Top 1%)   University of Electronic Science and Technology of China