# HENRY HU

Entry Level Software Developer

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## WORK EXPERIENCE

**Toolbx**  Sep 2024 – Dec 2024
Software Engineer (co-op)  [ *Node.js, React, GraphQL, PostgreSQL, TypeORM* ]  Remote
- Programmed software for construction material e-commerce, with heavy contribution to product enhancements, UX experience.
- Implemented full stack SMS messaging features using **Twilio** to facilitate customer-dealer communication.
- Collaborated with Product, Design to implement **2FA**. Put in charge of technical design, organizing tasks and upholding deadlines.

**SS&C**  May 2024 – Aug 2024
Full Stack Developer (co-op)  [ *Spring boot, Angular, PostgreSQL* ]  Remote
- Participated in financial asset management software development and **unit testing**, working with Angular and Spring boot.
- Contributed in sprints as a regular team member, scoping tickets, demo-ing features and assigned to bugs as a full-time would.
- Took lead in development of JOLT specs (Apache NiFi), transforming JSONs with list and object shifts using traversing operators. Projection data from **3** endpoints were run through the specs to match schema of downstream external sources.

**Infor Global Solutions**  Sep 2023 – Dec 2023
Software Developer (co-op)  [ *Docker, AWS EKS+ECS, K8s, GitLab CI/CD* ]  Remote
- Deployed **cloud microservices** and optimized CI/CD pipelines, reducing test runtimes by **1 hour** as a member of the Platform and Dev Ops team. Done by parallelizing Cucumber tests into separate K8s pods.
- Dockerized runtime images used by GitLab runners with AWS ECS to propogate build artifacts, provide test runtime environments and serve test reports in a **6**-staged pipeline.
- Refactored language localization process into an **automated** tool using AWS Translate for over **20** languages. Leveraging **GitLab pipeline and API** to automate translation, creation of merge-requests and generation of Wildfly DB migrations.

**Wonolo Inc.**  Jan 2023 – Apr 2023
Full Stack Developer (co-op)  [ *Ruby on Rails, React, GraphQL, PostgreSQL, Redis* ]  Remote
- Developed features for Rails app serving the temporary staffing industry as an active member in a fast-paced startup environment.
- Tasked with providing scheduled reports to users, done with **2** new DB tables, **8** GraphQL resolvers and **1** CRON job.
- Led development for new web portal visuals using React. Worked with Product and Design to improve UX and introduced over **10** styled common components interacting with GraphQL resolvers, all with **unit tests**.

**PointClickCare**  Sep 2021 – Dec 2021 / May 2022 – Aug 2022
Software Engineer (co-op)  [ *Spring boot, React, Cypress* ]  Remote
- Aided in developing React web app to organize prescriptions and pharmacy orders. Wrote **integration tests** with Cypress.
- Worked on a web messaging app using Twilio API in an Azure cloud environment. Learned about **RESTful web MVCs** in Spring Boot, using **DTOs**, React functional components and unit testing.
- Wrote logic as well as **unit tests** for controllers, models and frontend components. Maintained **>90%** code coverage.

## RELEVANT PROJECTS

**Showdown - Mobile**  [ *Unity, Netcode for GameObjects, Relay, Lobby* ]  Nov 2024
- Designed a two-player, rock-paper-scissors-like online game with Unity. Prioritized appealing **UI feedback**, **server-sided** state-keeping and client-side **animations** driven by the DOTWEEN asset. **Drew 20 sprites** in Krita.
- Implemented **shake detection** and **4 gesture swipes** as proof of mobile integration to enhance gameplay.
- Used the **Google Play Games** plugin for Unity, creating **9** unlockable achievements. In **Closed Testing** on Google Play Console.

**Poker Hands Game - WebGL**  [ *Unity, Netcode for GameObjects, Relay, Lobby* ]  May 2024
- Published multiplayer card game through Unity WebGL, with players taking turns declaring plausible poker hands from everone's hands. Managed **server-sided** game state, **network communication** using **RPCs** and **card hierarchy** logic driven by **OOP**.
- Utilized **Netcode** for GameObjects, Relay, Unity Transport and Lobby to connect players to **public** or **private** games.
- Integrated singleton, factory methods, observer-subject. C# delegates invoked over **15** different game events.
- Animated rotating, translating and scaling **UI** in coroutines using **3** interface implementations, along with tooltips and highlighting.
- Added **13** custom UI prefabs and **2** GameObject prefabs, based off and with the help of card prefabs from the asset store

**Image Classification Web App**  [ *Django, React* ]  Aug 2023
- Created Django app to allow users to train any of **4** image recognition neural networks on their own labelled images. Trained models are saved and inference is catered to users' training data. Production deployment used AWS EC2, RDS, S3 and Route 53.

**Personal Website and Portfolio**  [ *React, Next.js* ]  Sep 2022
- Used Next.js for a personal website hosted by Vercel, earning a Real Experience Score of **100** and Best Practices score of **95**.

## EDUCATION

**University of Waterloo**  Sep 2020 – Apr 2025
Candidate for Bachelor's of Computer Science with Software Engineering Specialization  3.96 GPA
Relevant courses: OOD, Data Structures, Algorithms, UI, OS, Software Design & Architecture, Software Testing/QA

## RESEARCH

**Undergraduate Research Assistantship**  May 2023 – Aug 2023
Dr. Justin Wan,  University of Waterloo  Deep Learning and Classification, Unsupervised Learning
- Explored unsupervised method to filter undesirable AI generated images that lead to creating a general image classification tool
- Worked with deep learning, feature extraction and classification using **TensorFlow** and **Hugging Face** vision models

## LANGAUGES

**Programming:** Python, Java, C/C++, C#, TypeScript  **Interpersonal:** English, DELF B2 French, N1 Level Japanese