Yucheng Tu

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WORK EXPERIENCE

Summer Research Intern **May 2024 – Present**

iMed Lab, University of Toronto

- Developed and implemented PyTorch deep learning models (CNN, RNN, Transformers, Hybrid) to classify swallowing events as healthy or dysphagic, achieving an 8% higher accuracy compared to state-of-the-art models in the field.
- Developed a user-friendly PC application using Python and the PyQt framework, enabling real-time monitoring and analysis of swallowing signals via the HRCA device.
- Preparing a conference paper for submission to IEEE EMBC 2025.

TECHNICAL ENGAGEMENTS

GIS Map Application Development **January – April 2024**

ECE297 Software Communication & Design, UofT

- In a group of 3, developed a OpenStreetMap-based map application using C++ and Glade framework. Responsible for code generation, testing, and debugging, plus designing the user interface.
- Engineered a solution to the complex traveling courier problem using a Genetic Algorithm, achieving the highest solution quality (1st out of 77) in the course.

Website Developments **Summer 2023 and Summer 2024**

Self-Initiated Projects

- ***Personal Website***
  Designed and developed a personal website to showcase professional experience, projects, and achievements. Utilized React.js for dynamic UI development, incorporating responsive design for optimal accessibility across devices. Applied modern web development practices, including JSX, CSS modules, and reusable components, to ensure a maintainable and scalable codebase.
- ***UTExtendedReality Club Website*:**
  Co-developed the UTExtendedReality Club website as part of a two-member team. Employed a comprehensive technology stack, including HTML, CSS, JavaScript, ReactJS, and NodeJS, to create a responsive and interactive platform tailored to the needs of the club's members and events.

Game Development **Summer 2024**

- Developed a strategic tower defense game using C++ and SDL2 libraries. Implemented diverse towers and enemy types, integrated an RPG component, and designed wave progression and resource management systems.

LEADERSHIP ACTIVITIES

Project Manager **Winter 2022**

Engineering Strategies & Practice II, UofT

- Led a six-member engineering team to successfully complete a client design project within three months. Defined project vision, allocated tasks, and ensured timely completion.

EDUCATION

Bachelor of Applied Science in Computer Engineering, PEY Co-op, *University of Toronto*
Sep. 2022 – Present
CGPA: 3.86 / 4.00

TECHINICAL SKILLS

- **Coding Languages:**
  Software: C, C++, JavaScript, Python, HTML and CSS.
  Hardware: C, Verilog, Quartus and ModelSim.
- **Library/Frameworks:** Reactjs, Nodejs, MongoDB, PyTorch, PyQt, Numpy, Pandas.
- **Scientific Writing:** LaTeX, Overleaf

SOFT SKILLS

- Multilingual Communication:
  - Chinese Mandarin: Native
  - English: Fluent
  - Japanese: Conversational
- Project Management
- Scheduling and Communication
- Problem Solving
- Teamworking

AWARDS

- University of Toronto Excellence Award
- Dean’s Honour List, UofT Engineering (All Semesters)
- Faculty of Applied Science and Engineering Admission Scholarship

CERTIFICATE

- IBM AI Engineering Professional Certificate