# Xianzhao (Paul) Duan

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## EDUCATION

**B.A.Sc. in Computer Science (Co-op) – McMaster University**          **Expected in 2026**
**McMaster University**                                                **Ontario, Canada**

- **Final 2 Years GPA**: 3.91 | **Cumulative GPA**: 3.81
- **Relevant Courses**: Data Structures & Algorithms, Computer Architecture, Computer Networks, Database Systems, Operating Systems, Concurrent Systems, Data Mining, Application of ML, NLP
- **Academic Achievement:** Engineering Award of Excellence (2021), Dean's Honour List (2022, 2023)

## PROFESSIONAL EXPERIENCE

**Software Developer Intern**                                          **Sept 2024 – Sept 2025**
SOTI.Inc                                                               Mississauga, Ontario

- Implemented 10+ features across Angular front-end and ASP.NET back-end, contributing to two major product releases on an enterprise mobile-device management platform serving over 20 million devices.
- Authored 180+ unit tests (Jasmine, NUnit) and business-oriented test scenarios (SpecFlow), covering 80% of the newly developed modules and integrated test suites into the Jenkins CI pipeline.
- Developed optimized data access layers against Microsoft SQL Server to support business logic operations.
- Actively collaborated in a cross-functional team, participating in sprint planning, daily stand-ups, backlog grooming, demos, and retrospectives to ensure on-time feature delivery.

**Full Stack Developer/Co-VP of Software Architecture**                **Sept 2023 – May 2025**
McMaster Start Coding - Software Architecture Team                     Hamilton, ON

- Developed and maintained an online Elm IDE, which is used by 1000+ students every year, with a maximum of 59k daily compiles.
- Built a full-stack web application using IHP, a type-safe Haskell MVC framework, with PostgreSQL as the integrated database.

**Algorithm Developer**                                                **May 2023- Jan 2025**
CODIDO.co

- Developed an intelligent cell image analysis tool in Python by integrating CellProfiler for feature extraction and HoverNet for nucleus segmentation and classification.
- Created Docker images for the cell analysis service, ensuring reliable deployment on AWS.
- Co-authored on *"PHARAOH: A collaborative crowdsourcing platform for phenotyping and regional analysis of histology",* published in *Nature Commuications*, 2025.

## PROJECT EXPERIENCE

**Canadian Literature Visualizations**                                 **Aug 2025**

- Designed and developed interactive data visualizations using D3.js and React to visualize Canadian literature trends, including metrics like average sentence length, readability scores, and word frequency.
- Implemented modular and reusable components, such as animated line chart and ranking chart, to create dynamic and responsive charts for enhanced user engagement.
- Integrated Python-based text analysis tools (e.g., textstat and spaCy) to preprocess and extract readability metrics and linguistic features from public domain literary texts.

**RBC Reach**                                                          **Jan 2023**

- Developed the frontend of a multilingual kiosk system using React.js and Google Maps API to help newcomers in Canada understand the banking system and locate the nearest branch.
- Built within 24 hours as part of a team of 4 and won the second prize at DeltaHacks IX(400+ participants).

## SKILLS

- **Languages:** Python, JavaScript, Java, Haskell, HTML, CSS, SQL, C/C++, C#, Bash
- **Libraries/Frameworks:** Angular, ASP.NET, Next.js, React.js, D3.js, SpecFlow, Express.js, IHP
- **Tools:** Git, GitHub, Docker, Linux, MS Office, LaTex