

Arthur Bournes

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Highlight of Qualifications

- Enrolled in year 3 of 4 in McMaster University's Software Engineering Co-op program
- Available for full 4, 8, 12 and 16 month co-op positions starting May 2022
- Experience building and training ML models using Python libraries (TensorFlow, scikit-learn, OpenCV)
- Proficiency in software testing and quality assurance through industry internship and coursework
- Strong teamwork and decision making skills shown through industry internships

Education

Bachelor of Engineering Co-op (BEng) | Software Engineering

Sept 2019 – Apr 2024

McMaster University, Hamilton ON

- Achieved a GPA of 3.8/4.0 and consistently achieved the Dean's Honour Roll (2019 - Present)
- Awarded \$2000 scholarship as in-course award for academic achievement

Relevant Coursework:

- **Software Testing:** Software life cycle, QA process, coverage-based, black-box, white-box, regression testing
- **Concurrent System Design:** Processes and Threads, Synchronization, Dynamic Systems, Program Verification
- **Software Development:** CI/CD, bash, Git, performance analysis, optimization, collaborative workflows

Work Experience

Junior Data Science Co-op | North York, ON

May – Aug 2022

XYZ Business Solutions

Tools Used: Python, pandas, NumPy, Matplotlib, Tableau, scikit-learn, TensorFlow, AWS, MySQL

- Analyzed large datasets using Python (pandas, NumPy) and SQL to identify significant insights, which increased efficiency of data-driven decision making by 23%
- Implemented ML models with scikit-learn and TensorFlow to find business solutions, increasing accurate predictions by 18%
- Constructed data visualizations using Tableau and Matplotlib to communicate statistical findings to stakeholders
- Prepared data through developing data pipelines and ETL processes using AWS Glue, reducing data processing times and yielding better results
- Collaborated with stakeholders to make data-driven decisions, highlighting critical-thinking and communication skills in high-risk settings

Quality Assurance Intern | Kitchener, ON

May – Aug 2021

CBASoft

Tools Used: Java, Python, C/C++, Selenium, GitHub

- Executed over 150 detailed test cases for SaaS projects, identifying and documenting 60+ defects, leading to 20% reduction in post-release issues
- Collaborated with other teams and departments to resolve 90% of identified software bugs, highlighting problem-solving and teamwork skills in fast-paced settings
- Implemented automated testing scripts using Selenium, reducing manual testing time by 40%
- Participated in design and code reviews, providing insightful feedback to maintain software quality

Project Management Intern | Remote

May – Aug 2020

ABC Solutions

- Assisted in planning and coordinating project timelines, deliverables, and resources for client projects
- Conducted market analysis to support business development initiatives, resulting in 2 clients acquired
- Collaborated with multiple teams and departments to ensure project milestones were met and communicated progress to stakeholders
- Participated in client meetings and presentations, gaining exposure to client relationship management and business communication

Personal Projects

Retinal Diagnostic Software

Mar 2022

McMaster University MedSprint Medical Hackathon

Tools Used: Python, OpenCV, pandas, Matplotlib, NumPy, TensorFlow, scikit-learn, Flask, GitHub

- Created a program that scans retinal images and provides diagnostics on diabetic retinopathy
- Imported large dataset and employed Python (OpenCV, NumPy) to process training data
- Implemented U-Net architecture and machine learning algorithms using TensorFlow, achieving 91% accuracy in diagnostic test data
- Deployed with a simple user interface for users to easily upload personal retinal scans, making diagnostic more accessible
- Collaborated with a group of 3 other students and achieved second place overall (\$200 prize)

MacMap Campus App

May – Dec 2021

McMaster University

Tools Used: JavaScript, React Native and Navigation, Expo Go, Redux, Node.js, Express.js, MongoDB, GitHub

- Developed a mobile navigation app for students and visitors to simplify travel around campus
- Employs APIs (Google Maps API) to get real-time information about locations and hours on campus, decreasing user travel time by around 15%
- Performed beta testing with 300+ initial users, with an average rating of 4.3/5 for user satisfaction
- Collaborated with campus IT services to implement real-time data from across school facilities, highlighting teamwork and communication ability

Degree Planner App

May – Jun 2022

McMaster University

Tools Used: JavaScript, React.js, Bootstrap, Moment.js, Firebase, Firebase Authentication

- Developed a centralized course/degree planner app using React, Bootstrap, Firebase, and Moment.js, providing users with a one-stop solution for all personal academic planning and management
- Implemented features for course selection, conflict resolution, and degree planning
- Optimized the app's performance to ensure smooth and responsive user experience, reducing load times by 30%
- Collaborated with team members to integrate various technologies, including Firebase Authentication for user management, enhancing the app's security and usability
- Presented the project at the hackathon, receiving positive feedback and interest from potential users and developers, leading to a 60% increase in project visibility

Extracurricular Activities

Open-Source Team Member

Sept 2019 – Apr 2021

McMaster University Google Developer Student Club

- Collaborated with a team of 10 developers to design and implement user-friendly interfaces using **React.js** and **Material-UI**
- Improved page load times by 30% through optimization techniques and efficient coding practices
- Participated in code reviews and provided constructive feedback to ensure code quality and adherence to best practices

Skills

Programming Languages: Python, JavaScript/HTML/CSS, SQL, Java, C/C++, Bash, Perl, MATLAB

Libraries and Frameworks: Flask, scikit-learn, TensorFlow, OpenCV, NumPy, pandas, Matplotlib, MongoDB, React.js/React Native, Expo Go, Redux, Node.js, Express.js, Moment.js, Material-UI, Bootstrap

Software Tools: Git/GitHub, AWS, Firebase, VS code, Tableau, Linux/Unix, Selenium, MS Office Suite, Gsuite Applications