David Collins

SOFTWARE ENGINEER

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Experience

Criteo
Ann Arbor, MI (Remote)
SOFTWARE DEVELOPMENT ENGINEER II
Aug 2021 - Present

- Member of the backend team responsible for ad delivery pipeline, internal campaign management API, and external API (**50M+ requests daily**) used by over **200,000 brands and retailers** worldwide.
- Owned multiple high-impact projects including **redesign of delivery pipeline** (ScyllaDB CQL based ad delivery cache, .NET (C#) event driven fault tolerant & scalable system).
- Wrote design documents, drove communication between stakeholders and created multiple internal tooling & "runbook" processes for triaging and handling data inconsistencies & issues.
- Delivered **high revenue impact "lockout" ad feature** which enables brands to reserve entire retailer page for product based ad placements.

Rocket Companies
Windsor, ON
SOFTWARE DEVELOPER
Mar 2020 - Aug 2021

- Owned the design and implementation of a "loan event" email framework using **.NET 5 integrated with Salesforce Marketing Cloud**. Allowed business users seamless customization of email templates originating from ingested lead data.
- Drove architecture design and implemented core features of lead management microsystem (C#, .NET Core).
- Implemented CI/CD architecture deployment pipelines using CircleCI and Terraform with AWS ECS, SQS, and Lambda.
- Full stack development of loan management portal using Angular, Node.js (Express), and .NET Core.

X By 2
Farmington Hills, MI (Remote)
SOFTWARE ENGINEER
Sept 2019 - Mar 2020

- Developed a Data Quality Framework using **React / Redux** and **Material-UI** allowing for efficient state management, paired with a RESTful API (**Java Spring Boot**) utilizing Spring Security and Spring Batch for multithreaded execution of data quality tasks.
- Delivered stories and features in an agile manner as the primary SME, planning future stories with product owners while ensuring smooth deployment to production environments.

X By 2
Farmington Hills, MI
SOFTWARE ENGINEER INTERN
May 2019 - Aug 2019

- Full stack development of Data Quality Framework (React / Redux + Java Spring Boot)

University of Windsor
Windsor, ON
TEACHING ASSISTANT
Sep 2018 - Apr 2020

- Assisted students during office hours and taught lab sessions for: Object Oriented Programming Using Java, Computer Architecture I: Digital Design and Computer Architecture II: Microprocessor Programming.
- Worked one-on-one with students to progress their understanding in advanced Java concepts, CPU architecture and related components.

Education

University of Windsor
Windsor, ON
BCS COMPUTER SCIENCE
HONOURS, MINOR IN MATHEMATICS
Sep 2016 - Apr 2020

- **95.4%** major average
- Board of Governors Medal Recipient (**highest graduating average** in program)

Publications & Conference Presentations

Collins, David. A Genetic Algorithm Approach to the Iterated Prisoner's Dilemma

- Presented paper as **speaker at Canadian Undergraduate Computer Science Conference** (July 27, 2019)
- Evolved finite state machines using a genetic algorithm to outperform classic strategies of the game theoretic problem known as the Iterated Prisoner's Dilemma.
- Top performing strategies discovered the importance of cooperating with their opponent rather than playing in their own best interest through gene crossover and random mutation of state-action pairs in a finite state machine.

Research Projects

Using Recurrent Neural Networks to predict rheumatoid arthritis activity levels (deep learning)

- Used Keras and TensorFlow (in Python) to implement a recurrent neural network to detect patterns in erratic C-reactive protein readings using real patient data from rheumatologist.
- Neural network achieved 86% success rate in classifying arthritis disease state.
- Breakthrough hypothesis and data findings are currently being applied on massive data sets by Pfizer with confirmed statistical significance.

Awards

2020	Board of Governors Award	Highest graduating average in program
2020	Great Distinction	Graduated with an academic standing of over **90%** (Major avg: 95.4%)
2020	Dean's List	Achieved above a **90%** average each academic year (2016-2020)

Skills

Programming	C#, .NET (Framework, Core, 6+), Python, SQL, JavaScript, Java, C, HTML, CSS, Bash
Tools / Other	React, Salesforce, EF Core, Git, GitHub, Gerrit, Docker