

Tuhin Ghose

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Summary

I study ECE at the University of Toronto where I intend to get specializations in computer software and computer networks. I'm also pursuing a minor in Artificial Intelligence engineering and a certificate in engineering business. As of now, I've completed my third year of engineering, and am currently interning at Citi. I am always looking forward to a new adventure and would love to chat about any new project or opportunity!

Experience

Software Engineer

Citi

May 2023 - Aug 2023 (4 months)

Technical Analyst, Loan Trading, Global Spread Products

- Investigated 10+ SQL deadlocks and resolved them in Java Spring services and SQL stored procedures.
- Coded OAuth2 authorization with whitelisting and merged the feature across 15+ Java Spring services.
- Resolved 20+ bugs and edge cases in Java Spring services that used Apache Kafka and WebSockets. Deployed code on servers using Jenkins for CI/CD.

Software Developer

Scotiabank - Global Banking and Markets

May 2022 - Apr 2023 (1 year)

Global Equity Trading Developer, Electronic Execution Services

Trading Desk

- Engineered a feature-rich MEAN stack website with 20+ pages, surpassing the limitations of the previous .NET website.
- Revamped data population from a file-based system with 70 minutes of lag to a real-time system using Python FIX handlers, QuickFIX parsing, and custom batch insertion for efficiency.
- Created a real-time website using Flask, Bootstrap and JS. Implemented LDAP auth and designed a dashboard with graphs comparing commissions, 6 tables summarizing trading activity, and insights into sectors and securities.
- Built a full-stack Flask and Bootstrap app integrating Bloomberg API for real-time market data retrieval, enabling live comparison with clients' trading activity.

Dev Team

- Developed Angular and Flask-based SQL CRUD app with LDAP auth for modifying MSSQL tables based on a config file.
- Rewrote SpringBoot Java apps, used by Portware in Python SQLAlchemy, resulting in a 30% efficiency improvement.

- Engineered React Flask app with SQL backend, summarizing around 55 dev team processes' status and enabling frontend execution of processes through child process spawning.
- Built trading exchange simulator (OMS) using Python QuickFIX and PyQt5, featuring in-memory order management, right-click actions for filling/cancelling orders, IOCs, randomized fills, and action-map-based behaviour.

Analytics Desk

- Investigated and mapped order routes, and derived cases to capture unique parent, child, and fill legs to create a master analytics database. Amplified data accuracy by 40% and efficiency by 75% using Pandas, SQL queries and bulk insertion into SQL tables.
- Collaborated with 3rd party providers to transform data from MSSQL tables using SQL stored procedures and Pandas, supporting their specs including security identifier conversion, fill time calculation, GTC order handling, and SFTP file transfers. Boosted data benchmarking efficiency by an impressive 60%.



Chief Technology Officer, Salus

UofT Hatchery

May 2021 - Sep 2021 (5 months)

- Developed a business plan for a mobile-first website to show users price comparison and let them buy tech products.
- Used Excel to perform data analysis on user survey to pinpoint our target market and their shopping habits.
- Designed mockups and a prototype of the app using Adobe XD. Created sales projections and a revenue model.
- Made a biweekly sales pitch to the advisory board members.



Software Developer, Autonomous Rover Team(ART)

University of Toronto Robotics Association

Sep 2020 - Apr 2021 (8 months)

- Part of the Computer Vision and Machine Learning team.
- Working on developing the software for the autonomous rover for the International Autonomous Robot Racing Challenge (IARRC) 2020.
- Used OpenCV and NumPy in python to implement an algorithm that detects the positions of the rover and calculates the curvature of the path ahead of the rover.
- Working on creating a depth map from the 2D input images and sensor data



Team Lead, Engineering Strategies and Practices- 2

University of Toronto

Jan 2020 - Apr 2020 (4 months)

- Spearheaded development of a clothing storage system for the Lord Landsdowne Child Care Center.
- Improved efficiency by distributing work and managing resources using Microsoft Projects with the Project Manager and consistently met deadlines.
- Coordinated, helped and oversaw team members.
- Final design made using FUSION360 and the design met ISO standards and the Ontario health standards.

- Developed presentation for the client that included salient features of the design, performance in tests prescribed by ISO, and cost analysis demonstrating our design's feasibility.



Team Lead, Engineering Strategies and Practices- 1

University of Toronto

Sep 2019 - Dec 2019 (4 months)

- Led a team of 6 students to create an early warning system for floods for the Toronto Islands.
- Issued directives, allocated work and oversaw research and work being done on the project.
- Oversaw development of Conceptual Design Specification (CDS) report with 3 alternative designs and methods to test and implement them.

Education



University of Toronto

Bachelor of Applied Science - BASc, Computer Engineering

Sep 2019 - Apr 2024

Minor in Artificial Intelligence Engineering with a Certificate in Engineering Business



Delhi Public School, Vasant Kunj

High School Diploma, Science

2005 - 2019

Licenses & Certifications



DELFL (Diplôme d'Etudes en Langue Française) Diploma Holder – Level A1 -
France Éducation internationale



DELFL (Diplôme d'Etudes en Langue Française) Diploma Holder – Level A2 -
France Éducation internationale



MATLAB Onramp - MathWorks



Virtual Internship Experience Program Participant - KPMG

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Skills

Apache Kafka • Microsoft SQL Server • Java Concurrency • OAuth • Spring Framework • Spring MVC • Spring Boot • Spring Security • Capital Markets • Express.js

Honors & Awards



Blue Tie and Scholar Badge - Delhi Public School, Vasant Kunj

2017

Awarded for academic proficiency in school for 6 consecutive years



National Merit Certificate - Central Board of Secondary Education

2016

Awarded for meritorious performance in CBSE-2016 exams by securing 10.0 CGPA



2nd Prize in the Hindustan Times PACE Quiz - Hindustan Times

Jun 2018



2nd Prize in the Times NIE Quiz - The Times Group

Aug 2018



Platinum Certificate in the Times Spark 'Read to Lead' Scholarship exam - The Times Group

2017