Bob Jeff

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Education
University of Toronto Scarborough, ON
Statistics Specialist: Machine Learning Stream, Computer Science Major, Economics Minor
2023 - 2027
• cGPA: 3.93/4.00; President’s Scholars of Excellence Program
• Relevant Coursework: Systems Programming (Unix, Bash, C), Data Science (R, Supervised Machine Learning),
Software Design (Java, UML), Computer Science II (Data Structures, Algorithms), Calculus II, Linear Algebra II
Work and Extracurricular Experience
Research Assistant | MAPELab – Rotman Commerce School of Management May 2024 – Present
• Supervised Machine Learning: Currently conducting text classification and analysis using the BERT NLP model
with Python and PyTorch, to classify the political status of 900+ conversations for academic research
• Preprocessed, merged, and transformed 900+ transcripts and surveys into a single dataset using Python, Pandas,
and bash script, contributing to academic research on political conversations
• Implemented a Python Web-Scraper with BeautifulSoup4 and Selenium to extract and create a dataset based on
encampments in 100+ North American universities, contributing to research on political neutrality
Data Processing Team Member | University of Toronto Aerospace Design Team May 2024 – Present
• Collaborating in a team of 4 to review literature of 10+ academic papers, as well as test and implement 3+ super
resolution deep learning models via Python, PyTorch and Tensorflow, improving quality of hyperspectral images
• Utilized Matplotlib, Pillow to visualize and summarize the data of 5 models to analyze super resolution techniques
Assistant Instructor | Kumon Inc. Aug. 2021 – Present
• Teaching 20+ K-12 students in Math and English by implementing lesson plans, improving scores by 50%
First Year Associate | Association of Math & Computer Science Students - UofT Oct. 2023 – Apr. 2024
• Collaborated with first years in hosting a networking event, bridging upper years together with 60+ first years
Projects
ClubHub | Python, React, Tailwind CSS, Javascript, PostgreSQL, Supabase Jun. 2024 - Present

• Co-led a team of 5 to build a web-based platform to display club events, dates, and descriptions across UofT
• Back-end: Developed an automated Python data scraping pipeline using the Instaloader API and the Meta-Llama
LLM to scrape and preprocess data from 100+ club Instagram posts, storing in a Supabase PostgreSQL database
• Front-end in Progress: Currently building a front-end interface in a team of 5 with React, Tailwind CSS, and
JavaScript to display 20+ club events on an interactive calendar, enhancing accessibility to club information
• Created 5+ PostgreSQL queries to add, delete, and filter 50+ records for testing, promoting quality assurance
Curator's Companion | Java, Git, Agile, JUnit, Jira, Firebase Jun. 2024 - Aug. 2024
• Collaborated with a team of 4 to implement the Agile (Scrum) software development process, facilitating daily
stand-up meetings and 20+ user stories on Jira to develop a user-friendly app on Android Studio through Git
• Back-end: Implemented an in-app data management system with Java, enabling users to add, delete, search, and
export art records, photos, and videos on Firebase - storing, displaying, and updating 100+ records in real-time
Climate Compass | Django, Python, Next.js, Tailwind CSS, HTML Jul. 2024
• Collaborated in a team of 5 to build a full-stack project that provides accessible climate information to users
• Front-end: Utilized Django, Next.js, Tailwind CSS, HTML, Javascript to develop and integrate 4+ webpage designs
from Figma with back-end data, enhancing readability and user experience
• Back-end: Implemented a multi-faceted data scraper with Python, using the Groq Llama3 AI Model, Google
Places, Kontur.io, and News APIs to fetch and display 20+ climate shelters/articles/policies on front-end
Technical Skills
Languages: Python, Java, C, SQL, R, Bash/Shell, JavaScript
Libraries and Frameworks: Python: Pandas, PyTorch, Tensorflow, Numpy, Matplotlib, BeautifulSoup, Selenium
Technologies: Unix, PostgreSQL, Git, Firebase, Supabase, Next.js, React, Tailwind CSS, HTML

Education
University of Toronto Sept. 2023 - Apr. 2027
HBSc, Computer Science - Software Engineering Stream (Specialist) & Statistics (Minor)
Toronto, ON
• University of Toronto Entrance Scholarship ($3000)

• Relevant Coursework: Software Design, Software Tools and Systems Programming, Introduction to Computer
Science I/II, Discrete Mathematics, Calculus I/II, Linear Algebra I/II

Technical Skills

Languages: Python, Java, C/C++, HTML, CSS, JavaScript/TypeScript, Go, SQL
Libraries/Frameworks: NumPy, RegEx, Pandas, Scikit-Learn, TensorFlow, PyTorch, React, Flask
Developer Tools: Git, Supabase, Bash, Firebase, Android Studio, AWS, Azure, JUnit, Mockito, VS Code, Eclipse

Projects

UofT ClubHub | Python, JavaScript, React, Tailwind CSS, Node.js, Supabase, Git | ® August 2024
• Developed a data scraper using the Instaloader API and Meta-Llama LLM to extract and preprocess data from
100+ UofT clubs Instagram across 3 campuses, making club events more accessible to students in all campuses.
• Co-led a team of 5 as Scrum Master, implementing professional Scrum practices, including daily standups and
sprint planning, to ensure efficient collaboration and timely project delivery.
• Implemented a front-end interface using React, Tailwind CSS, and JavaScript to fetch from supabase and display
20+ club events on an interactive calendar, and integrated user sign-up/login authentication.
Curator’s Companion | Java, Android Studio, Firebase, JUnit, Mockito, Git | ® July 2024
• Collaborated with a team of 4 to create an Android app for the Toronto Asian Art Museum, managing 50+ items
and allowing users to search, view, add, and remove which enhanced the museum’s visitor engagement.
• Applied professional Scrum software development, including daily standups and sprint planning, and utilized Jira
for tracking 20+ user stories, tasks, and progress throughout 3 sprints.
• Designed and implemented the app’s UI using XML and Java fragments to ensure a seamless user experience, while
integrating secure user authentication, Firebase data management, and rigorous testing with JUnit and Mockito.
AI Classification Model | Python, pandas, scikit-learn, Git | ® Jan. 2024
• Implemented logistic regression, data scaling, and Python libraries to create machine learning prediction models at the DS3 Datathon.
• Achieved a 94% accuracy in developing a high-performing model for classifying celestial objects.
• Built a binary classification model for predicting heart disease, achieving 85% accuracy through rigorous evaluation
and optimization of model parameters.

Experience

Product Development Engineer Jan. 2023 - May 2023

University of Toronto - Engineers Without Borders (EWB) Toronto, ON
• Led a team to design a 3D sleeping pod prototype using Onshape, providing innovative solutions to support the
homeless during Toronto's harsh winter months.
• Emphasized sustainable materials and energy-efficient solutions in the design of the sleeping pod to promote
environmental responsibility and long-term usability.
• Worked on Toronto city development, gaining insights about the engineering mindset, identifying opportunities,
creating metrics, developing solutions, testing methods, and presentation skills.
Computer Technician Intern Apr. 2022 - June 2022
reBOOT Canada Toronto, ON
• Repaired and ensured the functionality of refurbished electronics through diligent quality control, including testing,
troubleshooting, and adherence to industry standards. Operated proficiently across Windows, Linux, and Mac.
• Managed and updated databases with detailed information on refurbished computers, ensuring accurate tracking
and efficient inventory management.
• Contributed to reBOOT Canada's initiative, helping approximately 1,000 low-income families annually by
refurbishing and selling electronics at a lower price.

Education
University of Toronto Toronto, Ontario
BSc. Honours Computer Science (GPA: 3.78) Sept. 2023 – Sept. 2028
Experience
Mobility Innovations Lead Aug. 2024 – Present
AUToronto Toronto, Ontario
• Led a team of engineering undergraduates in the Mobility Innovations competition for the SAE AutoDrive
challenge, hosted by GM.
• Developed novel solutions to prevent antagonistic actions intended to disable autonomous vehicles or prevent all
dynamic functions of an autonomous vehicle on public roads.
Data Processing Member Jan. 2024 – Present
University of Toronto Aerospace Team Toronto, Ontario
• Leveraged transfer learning to implement diffusion models and transformer models to remove complex noise (any
distortions in the image) from hyper spectral images using TensorFlow and PyTorch.
• Co-authored a research paper titled "Beyond the Visible: Jointly Attending to Spectral and Spatial Dimensions
with HSI-Diffusion for the FINCH Spacecraft", which was presented at the SmallSat Conference in Logan, Utah.

Firmware Developer Jan. 2024 – Present
University of Toronto Aerospace Team Toronto, Ontario
• Developed drivers for the FINCH satellites Emergency Power System, which consisted of a BMS, load switches,
buck converter and an MPPT board.
• Analyzed circuit schematics and CPU datasheets to manipulate registers and establish communication between the
OBC and the EPS using I2C protocols.
Projects
AI Digital Marketing | Django, PostgreSQL, GCP, Llama 3 Jun. 2024 – present
• Developed a Django-based application to automate and optimize email marketing campaigns.
• Implemented Selenium to find relevant businesses and utilized Scrapy to extract content from their websites.
• Integrated the LLM Llama 3 to generate personalized email templates tailored to individual businesses.
• Leveraged Google Cloud Platform for user authentication and enabled Gmail-based email dispatch.
• Engineered a PostgreSQL database solution to securely store and manage users' email campaign data, ensuring fast
data retrieval and scalability.
TAAMS Item Collection Management | Android, Java, Firebase, SCRUM Jul. 2024 – Aug. 2024
• Led a development team in building an Android app in Java for the Toronto Asian Art Museum.
• Served as SCRUM master, facilitating daily stand-ups and removing sprint impediments to ensure smooth progress
• Integrated Firebase Authentication for secure admin login and utilized Realtime Database for efficient museum item
management.
DrawNote AI | C#, Azure, PyTorch, Swift May 2024 – Jul. 2024
• Developed DrawNote AI, an iOS app designed to capture whiteboard and blackboard drawings, converting it into
OneNote pages to assist students with note-taking.
• Employed Azure Storage Blobs and Azure Functions to execute PyTorch DNN models for drawing extraction.
• Utilized C# and the InkML markup tool to make POST requests to OneNote for content transfer.
• Designed a user-friendly interface with Swift, incorporating MSAL authentication for secure Outlook email login.
Prince Financials - Forex Trading Bot | Python, GCP, Terraform, Swift Nov. 2023 – Jan. 2024
• Developed a Python module to seamlessly interact with the Google Cloud API, facilitating the creation of
schedulers, Pub/Sub topics, Cloud Functions, and the deployment of trading bots to Google Cloud.
• Employed Terraform and the python-terraform module to establish and configure Google Storage Buckets,

optimizing storage for Python scripts associated with the trading bot.
• Designed and implemented an iOS app using Swift and SwiftUI, featuring secure login and registration
functionality backed by Firebase authentication.

Technical Skills

Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS, Swift, C#
Frameworks: TensorFlow, PyTorch, Django, React, Node, Flask
Developer Tools: Git, Docker, Google Cloud Platform, Azure, VS Code, Visual Studio, STM32CubeIDE
Libraries: pandas, NumPy, Matplotlib, python-terraform, Sklearn, GSAP, Lenis, Selenium, Scrapy

Education

University of Toronto Sept. 2023 – May 2027
Bachelor of Science in Computer Science, Minor in Statistics; GPA: 3.96/4.00 Toronto, ON
• Relevant Coursework: Software Design, Software Tools and Systems Programming, Introduction to Data
Science, Introduction to Computer Science II, Calculus II, Linear Algebra II, Discrete Mathematics

Experience

Software Engineer July. 2024 – Sept. 2024
Okare AI Toronto, ON
• Developed a Flask app with a Python backend to integrate the Open Dental REST API into the Okare AI
codebase, enhancing the overall product offering.
• Built a CI/CD pipeline for Heroku deployments using Bash scripts, GitHub Actions, and Heroku CI.
• Designed and implemented database schema in UML and PostgreSQL to efficiently manage patient, dentist, and
clinic information.
• Automated customer key retrieval using Selenium, completely eliminating administrator overhead and
streamlining user experience.

Firmware Developer May. 2024 – Present
University of Toronto Aerospace Team Toronto, ON
• Developed software for the FINCH satellite’s housekeeping and parameter services on STM32 Microcontrollers
using C running on the Zephyr RTOS.
• Worked with a team of developers following test-driven development practices, creating detailed test plans and
implementing tests using the Unity and Ztest frameworks.
• Utilized LibCSP message queues to collect telemetry data and forward it to the parameter service, ensuring
reliable communication between satellite subsystems.

• Actively participated in weekly meetings and code reviews, effectively communicating key design decisions to team
leads.

Projects

ClubHub | React, Tailwind CSS, Javascript, Python, Huggingface June. – Sept. 2024
• Co-led a team of four in designing and developing an interactive web-based platform that displays club events from
all of the University of Toronto's three campuses.
• Developed an automated data fetching pipeline using GitHub Actions, Instaloader and Hugging Face to scrape,
filter, and store data from 1000+ club Instagram posts into a Supabase database.
• Created a responsive front-end interface to showcase 200+ club events from over 100 clubs on an interactive
calendar, enhancing user engagement and experience

Curator's Companion | Java, Firebase, Mockito, JUnit5 June – Aug. 2024
• Developed an Android app for the Toronto Asian Art Museum to streamline collection management and display.
• Implemented the Model-View-Presenter pattern, writing JUnit tests with Mockito to achieve 100% code coverage.
• Acted as Scrum Master, leading daily standups, sprint planning and backlog management resulting in successful
project delivery over 3 sprints.

Water Quality Trends in Ontario's Inland Lakes | R, tidyverse, ggplot2, rattle, rpart Mar. – Apr. 2024
• Coauthored a ten-page report in R Markdown, analyzing and visualizing trends in lake quality and productivity
using data from the Ontario Lake Partner Program (LPP).
• Achieved over 95% accuracy in predicting lake productivity by developing a random forest model through
multi-class classification and cross-validation.

Technical Skills

Languages: Python, Java, C, Javascript, R, PostgreSQL
Frameworks: Flask, Django, Next.js
Libraries: React, pandas, matplotlib, TensorFlow, PyTorch, NumPy
Testing: JUnit, Mockito, Unity, ZTest, Selenium, pytest
Developer Tools: Git, AWS, Firebase, Nginx, gunicorn, Supabase, Heroku