SATRAJIT CHATTERJEE

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EDUCATION

University of Ottawa — Sep 2019 – Apr 2024
JOINT HONOURS BSc IN COMPUTER SCIENCE AND MATHEMATICS CO-OP (DEAN'S LIST) — **GPA**: 4.0/4.0
- **Ex Academic Vice-President** of the uOttawa **Computer Science Student Association**

EXPERIENCE

KPMG — Toronto, Canada
Full-Stack Software Developer - Pay Equity — *Sep 2023 – Dec 2023*
- Implemented a baseline tool for **Quebec pay equity analysis** and **classification** with **98%** case coverage.
- Formulated a **legislation to code translation pipeline**, converting legal documents into **bilingual software** used by consultants, and automating **50%** of the auditing process.
- Constructed an automatic **payout distribution tool** for auditing in **React** frontend & **Python REST API** endpoints.

Intact Financial Corporation — Toronto, Canada
AI Backend Developer - Rating Revolution — *May 2023 – Aug 2023*
- Improved **PySpark DataFrame querying** and **Databricks** workflows by **50%** using **Java** user-defined functions.
- Built **wrapper functions** used for insurance **premium validation techniques** and compared **4 risk models**.
- Enforced **data governance** on personal identifiers using **Snowflake** access control & **dynamic masking policies**.

AI Backend Developer - AI Claims — *Sep 2022 – Dec 2022*
- Developed an **automated insurance fault detection testing algorithm** in **Python** involving **graph model generation** for the **AI Claims Rules Engine** question flow manager, with **2 million** generated test cases.
- Utilized **OpenAPI** classes for case assertion of **95%** coverage with automated **Bash** testing flow to **GitLab** & **Jira**.
- Applied **design patterns** of **facades**, **adapters** & **factories** to design algorithms, reducing execution time by **53%**.

RBC Royal Bank of Canada — Toronto, Canada
SRE Software Developer - T&O — *Sep 2022 – Dec 2022*
- Implemented **SRE** portfolios with **GraphQL**, **ElasticSearch** & **PostgreSQL** queries causing **40%** faster data access.
- Developed **SLI** log data analysis tool to predict **error budget** with **80% accuracy** using **supervised learning**.
- Created interactive service **dependency graphs** in **React** using **d3**, **React Flow** and **MUI** with adaptive node generation and positioning, with designed **flow**-based interactive prototypes using **Figma** and **LucidChart**.

University of Ottawa — Ottawa, Canada
Full-Stack Software Developer - Engineering Outreach — *Sep 2022 – Dec 2022*
- Built over **30 REST API** endpoints in **Spring Boot** with **Java servlets** and **JSON schemas**, tested using **Postman**, with **GoLang** scripts to log execution stats, connected to frontend using **TypeScript**, **Angular**, **SCSS** & **Bootstrap**.
- Deployed services on **AWS** with **S3** buckets for storage & **ECS** for **Docker** deployments, & **CI/CD** using **Travis CI**.
- Reduced stack execution time by **60%** by migrating tests from **Selenium** to **Protractor** & **Cypress**.

PROJECTS

Leukemia Genomic Clonal Analysis - Honours Project | *Python, R, GitHub, Docker, BASH, Linux, Bioinformatics*
- Researched variational algorithms to detect cancer cells in single-cell RNA data.
- Preprocessed **multiomic genetic datasets** and compared performances of **CopyKAT** & **SCEVAN** algorithms on CITE-seq data with ~**70%** accurate classification of unhealthy cells.
- Scripted automation workflows, containerized using Docker, for research replicability of **99%** steps.

Linepaste | *Javascript, Node.js, React, MySQL, Firebase*
- Time-controlled encrypted content sharing platform with a Node frontend & Python backend with MySQL server.

KaratAI | *Python, Flask, OpenCV, React.js, Express.js, Adobe XD*
- Posture recognition using mapping of real-time video frame processing & a scoring system to train users in Karate.

TECHNICAL SKILLS

Languages: Python, Java, C++, GoLang, Javascript, HTML/CSS, Ruby, R, PostgreSQL, Bash, Elixir, C#, Scheme, OCaml
Frameworks & Tools: Node.js, Docker, Kubernetes, Git, Spring Boot, React, Angular (Typescript), Next.js, Firebase, Redis, NumPy, Pandas, Scikit-learn, OpenCV, AWS (S3, ECS, Lambda), GCP, Flutter, Android, Linux, Jira, Unity, Apache Sling, d3