Aritra Kar

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SKILLS

- **Languages**: C/C++, Python, Java, TypeScript, JavaScript, Golang, R, SQL, HTML/CSS, Bash, MIPS
- **Libraries & Frameworks**: React, Spring Boot JPA, TensorFlow, PyTorch, Scikit-learn
- **Other**: AWS, Azure, Terraform, Docker, Jenkins, Git, CMake, PostgreSQL, NoSQL, Node.js, *-nix, Jupyter, LaTeX, Agile

EXPERIENCE

Royal Bank of Canada   Toronto, ON
Cloud Engineer (Data and Analytics Platforms, Technology & Operations)   *September 2023 - December 2023*

- Increased deployment efficiency by **30%** through automating infrastructure setup with **Golang**, **Jenkins**, and **Terraform**, simplifying complex Databricks workspace deployments in a secure environment.
- Enhanced backend functionality of key products by developing Java-based microservices using **Spring Boot JPA**, integrated with **Azure Data Factory** and **Microsoft Purview** to optimize data governance and ETL processes.

Sportiqo Labs Inc.   Oakville, ON
Software Developer (Part-time)   *February 2023 - Present*

- Independently spearheading the creation of an automatic sports article generator LLM, employing **Python**, **LangChain**, and **Apify** technologies to streamline content generation.
- Created dynamic and interactive cricket Sporti-score component visualizations using **JavaScript (Chart.js)**, enhancing data understanding and presentation.

BlackBerry Ltd.   Waterloo, ON
Application Software Developer, Product Engineering (CylanceGATEWAY & BBM Enterprise)   *January 2023 - April 2023*

- Designed and developed a multithreaded data engine in **C++** to improve packet-capture efficiency, integrated with a **Python** ML model to predict C2 beacons from the captured network traffic without peeking at packet data.
- Implemented 5+ features for core libraries utilized extensively across multiple BlackBerry projects. Resolved OIDC and 2FA authentication flow issues in Gateway's internal testing tool, resulting in a **50%** efficiency increase.

BlackBerry Ltd.   Waterloo, ON
Software Developer   *May 2022 - August 2022*

- Created automated tools with **Python** and **AWS** for release package management improving efficiency by **30%**.
- Designed and implemented a JSON configuration file semantic validator in **C++** and integrated it into IVY IVDP.
- Led team of 4 to improve client interaction with the Camera service by implementing the Permission service callback feature. Additionally, developed **Bash** scripts to automate build, upload, and test processes, boosting efficiency.

PROJECTS

Latexify Py (Google open-source) │ *Python, NumPy, LaTeX* │ *November 2023*   🔗
- Added support for converting NumPy NDArray single function expressions to LaTeX and fixed GitHub CI issues.

Music Player App │ *Next.js, React.js, TypeScript, JavaScript, PostgreSQL* │ *August 2023*   🔗
- Built a music player app in a team setting, incorporating features like user authentication, playlists, and hot charts.
- Led dark mode implementation and developed several reusable components, improving UI and scalability.
- Contributed to database design and E/R diagram development, ensuring efficient data management and integrity.

Reinforcement Learning Mini-projects │ *Python, PyTorch, Stable-Baselines3, OpenAI Gym* │ *August 2023*   🔗
- Developed advanced RL agents by leveraging algorithms from Stable-Baselines3 and environments from OpenAI Gym, enhancing theoretical knowledge acquired in academic coursework with practical application.
- Constructed agents for classic problems and games, including the Inverted Pendulum/Cart-Pole problem, Lunar Lander, and Atari *Pong*, demonstrating the diverse applications of AI techniques.

EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Computer Science (Minor in Statistics; A.I. Specialization)   *September 2020 - April 2025*

- **Relevant Coursework**: AI, ML, OS, Algorithms, Data Structures, OOP, Databases, Compilers, Stochastic Processes
- **Organisations**: **Wat Street** (Quantitative Dev.), **Entrepreneurship Club** (Sr. Full Stack Dev.), Poker Studies
- **Awards**: President's Scholarship of Distinction ($2k), Mathematics International Experience Scholarship ($5k), Certificate of Distinction in Euclid Mathematics Contest *(Top 25% worldwide)*