

AKSHAY RAKHEJA

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SUMMARY

Innovative software engineer with a Master's in AI/ML and a passion for building products that drive business value through AI and automation. Proven track record of delivering impactful solutions, including 8 hackathon wins in AI and blockchain. Skilled in enhancing operational efficiency and user experience through advanced AI models and automation platforms. Currently at CGI, developing AI tools that streamline processes and improve decision-making.

SKILLS

- **AI/ML:** Vertex AI, RAG, Langchain, CrewAI, PyTorch, MCP, Pinecone
- **Languages:** Python, C, C++, Javascript
- **Cloud and Infrastructure:** GCP, AWS

PROFESSIONAL EXPERIENCE

CGI Toronto, Ontario
Sr. Software Engineer **11/2024 – Present**

- **Developed and maintained experience APIs using Moveworks' Creator Studio**, enhancing system scalability and user experience through seamless **ServiceNow integration**.
- **Integrated REST APIs with Moveworks** to enhance data aggregation, automate workflows, and improve system efficiency.
- **Led periodic access review campaigns with cross-functional teams**, improving compliance and data security.

IMMIGRATE.AI Etobicoke, Ontario
Software Engineer **03/2023 – 10/2024**

- **Developed a Chrome Extension:** Achieved a 95% reduction in webform filing time, dramatically enhancing employee productivity and minimizing error rates.
- **Built an Agentic Microservice:** Created a sophisticated microservice that generates fully researched and cited business documents, streamlining documentation processes.
- **Improved user query resolution time by 30%** through Graph RAG-powered Q/A bot integration within the ERP system.
- **Created DocCheck, an OCR tool for verification and validation of unstructured documents.** This would further reduce the time taken by immigration counselors to review and process an individuals application.

PRONTI AI Toronto, Ontario
Software Engineer **11/2022 – 01/2023**

- **Addressed User Engagement Challenge:** Resolved a lazy user issue, significantly improving the user experience and driving downloads to over 1 million.
- **Designed and Deployed Efficient Microservice on GCP:** Engineered a high-performance microservice using Gmail parsing for shopping purchases and ResNet 18 for image classification, resulting in the seamless auto-population of a virtual app closet.

ALPACA MARKETS Toronto, Ontario
Growth Product Manager Intern **04/2022 – 10/2022**

- **Developed Slack Integration for Trading:** Created a seamless Slack integration that enabled users to execute trades directly within Slack, enhancing the trading experience.
- **Authored Technical Blogs for Algorithmic Trading:** Wrote technical blogs with code examples aimed at software developers, promoting Python-based algorithmic trading. This initiative led to approximately a 45% increase in Crypto API usage.

WAYMO Palo Alto, California
Hardware Test Engineer **06/2019 – 02/2020**

- **Implemented Comprehensive Hardware Testing Protocols:** Developed and executed rigorous testing procedures to identify key electrical, mechanical, and environmental failure points, leading to a 20% reduction in hardware failures and significantly enhancing system reliability.
- **Conducted Root Cause Analysis:** Applied deep expertise in root cause analysis to assess and improve product performance and reliability, ensuring optimal operation of self-driving vehicle systems.

SANMINA AND ZOLLNER ELECTRONIK AG Palo Alto, California
Hardware Test Engineer **05/2017 – 06/2019**

- **Developed Comprehensive Test Plans:** Designed and executed detailed test plans, conducted yield loss analysis, reviewed schematics, and managed the setup and validation phases, successfully transitioning projects to production.
- **Implemented Data Collection Scripts:** Created and deployed scripts for real-time data collection, leading to a 70% reduction in the time required to fix PCBA issues through enhanced tracking and analysis.

HACKATHONS

TWELVE LABS WEEKEND HACKATHON

1st Place, 05/2024

- **Developed a Semantically Searchable Video Clipping Tool:** Built a web application using React and TypeScript that allowed users to create and share semantically searchable video clips of Chessboxing matches.
- **Integrated Advanced AI Models:** Leveraged Marengo's advanced video understanding models to enhance search capabilities, providing users with precise results for specific actions like knockouts or checkmates.
- **Enhanced User Experience with AI-generated Music:** Implemented video processing using FFmpeg to overlay AI-generated music on selected clips, improving the overall user experience.

GOOGLE VERTEX AI HACKATHON

07/2023

- **Developed a solution for medium-sized GCP customers** to leverage the power of OpenAI while maintaining control over their proprietary data, by connecting audio import of meeting recordings using Google Cloud Run and Google Speech-To-Text with the latest-generation Chirp model.
- **Designed and implemented a Vertex matching engine** using the Gecko embeddings model, allowing customers to query their data using a langchain-enabled Chainlit instance running on Cloud Run, which leverages the latest Palm 2 chat interface and vector search from Matching Engine.
- **Built an all-Google approach for compliance and safety**, replacing the need for third-party services like Pinecone, Ada, and GPT4, and successfully demonstrated the potential for secure and private AI applications on the Google Cloud Platform.

AI21 LABS HACKATHON

2nd Place, 07/2023

- **Integrated AI21 Language Models with No-Code Tools:** Connected AI21's advanced language models with popular no-code platforms like Zapier and Make, enabling users to create sophisticated automated workflows without programming expertise.
- **Enhanced Automation for Language-Related Tasks:** Developed integrations for AI21's J2 Completions and Task-Specific APIs, streamlining tasks such as customer support responses and content generation for non-technical users.
- **Empowered Citizen Developers:** Provided innovative solutions that democratized AI capabilities, allowing individuals with minimal coding skills to leverage state-of-the-art language models in their automation workflows.

PINECONE HACKATHON

06/2023

- **Designed and developed a no-code AI helper** that integrates with Webflow and GitHub repositories, providing users with instructions specific to their project and avoiding code hallucination through semantic search.
- Utilized **Langchain, OpenAI, Pinecone**, and other AI technologies to build the project, and deployed it with Netlify, Clerk, and Convex on the back-end.

CHAINLINK FALL HACKATHON

1st place, 12/2022

- **Designed and developed a serverless, no-code platform** that enables developers to connect their smart contracts with webhooks in the cloud using Chainlink Oracle contracts, radically cutting the costs of off-chain services and making it easy for independent developers to explore more use cases.
- **Built the off-chain state and primary API using Xano**, a no-code backend platform, and leveraged Moralis Stream API to listen for on-chain events, ensuring data integrity and verification through a Netlify function.
- Successfully implemented ABI encoding of structs and CBOR encoding of request parameters, and worked with multiple chains, including Polygon, to provide a reliable and efficient solution for linking on-chain with off-chain resources.

ETHGLOBAL's HACKFS

Top 10 Finalist and Grant, 07/2022

- **Designed and developed a standard for immutable, dynamic documents** using IPFS and Polygon smart contracts, enabling users to reference exactly what they signed based on the webapp, template document, contract, and block number.
- **Created mixins and reference implementations for ERC20, 721, and 1155 contracts** to support DeFi, NFT, and DAO use cases, and developed a markdown-based template renderer to make it easy to sign documents, hosted on IPFS to guarantee immutability.

EDUCATION

M.Eng, Electrical and Computer Engineering, *Specializing in AI and ML*
UNIVERSITY OF WATERLOO

2022, Waterloo

BSc. Electrical Engineering
PURDUE UNIVERSITY

2016, West Lafayette