

Abhinav Kumar Singh

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EDUCATION

- **The University of Melbourne** Melbourne, Victoria
Master of Information Technology; WAM: 84.00 *Feb 2019 – Jan 2021*
- **SRM Institute of Science and Technology** Chennai, India
Bachelor of Technology in Information and Telecommunication; GPA: 9.8 *Aug 2012 – July 2016*

EXPERIENCE

- **WooliesX** Melbourne, Australia
Senior ML Engineer *Mar 2022 – Present*
 - **Intelligent Search and Recommendations:** Engineered recommendation systems powered by vector databases (e.g., Weaviate) and semantic embeddings to deliver faster and more accurate search experiences across platforms, significantly enhancing search relevance and user satisfaction.
 - **Agentic AI for Customer Support:** Developed a proof-of-concept chatbot leveraging agentic AI patterns to handle queries related to products, orders, and customer support. Designed to autonomously process contextual data and provide accurate, real-time assistance, showcasing the potential for enhanced customer satisfaction and operational efficiency.
 - **Intelligent Offer Allocation:** Engineered and fine-tuned high-impact machine learning models to optimize offer allocation, directly driving a measurable increase in incremental sales and enhancing customer engagement by over 16%.
 - **Real-Time Behavioral Targeting:** Developed and implemented deep learning models that leverage real-time customer behavioral data to dynamically display personalized content, resulting in a 10% increase in engagement and conversion rates.
 - **Modelverse Development:** Led the design and implementation of Modelverse, an in-house, end-to-end MLOps platform that empowered data practitioners at WooliesX. Modelverse seamlessly integrated MLflow for versioning and collaboration, supporting high-scale, high-density, and frequently-changing model serving use cases. It significantly reduced deployment time while enhancing model governance and operational efficiency across teams.
 - **Advanced MLOps:** Implemented automated pipelines and scalable deployments, utilizing Python, PyTorch, Kubernetes (K8s), Docker, and MLflow, resulting in a 40% reduction in time-to-market for machine learning solutions.
 - **Cross-Functional Collaboration:** Worked closely with diverse teams to ensure seamless end-to-end deployment of machine learning models, maintaining high standards of reliability, scalability, and performance in production environments.
- **Servian** Melbourne, Australia
ML Engineer *Oct 2021 – Mar 2022*
 - **Personalized Recommendation Systems:** Led the development of scalable recommendation algorithms, leveraging collaborative filtering, content-based models, and deep learning techniques to provide tailored product recommendations. Improved customer satisfaction and engagement metrics by 8%, while driving incremental revenue for clients in retail and media industries.
 - **End-to-End Machine Learning Deployment:** Designed and deployed advanced machine learning pipelines, seamlessly integrating real-time recommendation models into production. Employed Python and PyTorch to build a modular, reusable framework that enabled rapid iteration and deployment of machine learning models at scale.
- **6Clicks** Melbourne, Australia
AI Engineer *Feb 2021 – Oct 2021*
 - **Hailey AI Engine Development:** Played a pivotal role in designing and enhancing the Hailey AI Engine, central to 6Clicks' GRC platform. This AI-powered engine revolutionized how businesses automate and accelerate compliance processes, enabling users to achieve in seconds what previously took days.
 - **NLP Integration:** Leveraged advanced Machine Learning (ML) and Natural Language Processing (NLP) to develop capabilities such as Compliance Mapping and Policy Gap Analysis, which provided instant insights into overlaps between internal controls and external compliance requirements, streamlining risk and compliance management.

- **Platform Integration:** Ensured the seamless integration of the Hailey AI Engine into the multi-tenanted platform, enhancing functionality and providing real-time, AI-driven insights that added substantial value to users.
- **EY**

Associate Software Engineer

Bengaluru, India
Aug 2016 – Sep 2018

 - **Solution Automation:** Engineered and deployed end-to-end automation solutions across industries like supply chain, banking, and HR, leveraging RPA tools (UiPath, Automation Anywhere) and custom Python scripting to build scalable workflows. Improved operational efficiency by reducing manual workloads by over 25%, integrating with enterprise systems through REST APIs, and ensuring robust error handling for production environments.
 - **Robotics Centers of Excellence (CoE):** Designed and implemented enterprise-grade automation frameworks for establishing Robotics Centers of Excellence (CoE), incorporating modular workflows, CI/CD pipelines, and version control to streamline deployments. Optimized processes for 40% higher throughput while ensuring compliance with security standards and enabling teams to adopt automation at scale through strategic knowledge transfer.

TECHNICAL SKILLS

- **Programming Languages and Frameworks:** Python, C++, Golang, TensorFlow, PyTorch, Kubeflow, Kubernetes, FastAPI, LangChain, Javascript
- **Database:** PostgreSQL, MongoDB, Google BigQuery, Google BigTable, Google Firestore
- **Tools:** Git, Jira, Jenkins, Github, Docker, Terraform, VS Code, Postman, Cursor
- **Cloud:** Google Cloud, Microsoft Azure, AWS

HONORS AND AWARDS

- **AI Katas Champion**

O'Reilly Media

Sydney, Australia
Nov 2024 – Dec 2021
- **Melbourne Engineering Scholarship**

University of Melbourne

Melbourne, Australia
Feb 2019 – Jan 2021
- **Top Graduate in Department**

SRM Institute of Science and Technology

Chennai, India
Aug 2012 – July 2016
- **SRM Engineering Scholarship**

SRM Institute of Science and Technology

Chennai, India
Aug 2012 – July 2016