DIVYUM SINGHAL

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Final Year Engineering Student seeking a career that compliments my passion for Tech, Software, Innovation, Applied AI & Data Driven Solutions, bringing a mix of academic accomplishments & hands-on experience (~9 months) to the team.

EDUCATION

Trinity College Dublin — Dublin, Ireland

Bachelor of Engineering – Computer & Electronic Engineering — 08/2022 - 05/2026

Class Rank 1: Stanford-Smith Prize · Grade: First Class Honours · **Capstone Project:** Multi Agent Controller System for Next Generational Optical Networks using MCP (Model Context Protocol), LangChain, LangGraph Swarm, Ollama, Digital Twin / Simulations, TCD Testbed with Trinity & Connect Research

TCD Student Managed Fund - Quantitative Trading Sector · Trinity News Writer · S2S Mentor · Trinity Entrepreneurs Society

Massachusetts Institute of Technology – MIT Horizon: Technology Certificate (Online) — 08/2023

Project Management Institute: PMI – Career Essentials in Project Management by Microsoft & LinkedIn — 08/2023

Google – GCP Accelerate AI with Cloud Run Workshop & Google Algorithms Workshop — 10/2025

WORK EXPERIENCE

Microsoft (Mountain View, Dublin – **EU HQ**) – Software Engineering Intern — 06/2025 – 09/2025

Cloud & AI - Azure Edge + Platform - Global Observability RnD - Multidimensional Metrics (MDM), Health & AI Ops Infrastructure Team

- Contributed to the design, development, & deployment of Azure's **planetary-scale, globally distributed, near real-time** telemetry & health infrastructure for 50+ applications, focusing on **high-availability** infrastructure**, hyper-scale** reliability, & deployment **velocity** using C#, ASP.Net, Python, Azure DevOps, ARM Resource Manager, SFMC & NuGet.
- Engineered & optimised high-reliability components for distributed system telemetry pipelines across **Commercial & Government clouds**, utilising robust validation mechanisms, **distributed computing** & **high-scale infrastructure**.
- Designed, implemented & automated an intelligent **high speed incident management, auto-triage & response system** for next-gen infrastructure, to **classify, assign, debug, respond & resolve** 5k+ deployment failures/month, reducing manual effort by 70%, improving global reliability & increasing **response speed & accuracy** by over 45%.
- Developed **low-latency** actions/automations for Azure's **global observability** platform, enabling safe, production-grade telemetry **extraction, system inspection, & recovery** workflows across cloud based VMSS (Virtual Machine Scale Set) based architecture, improving operational **speed, efficiency & reliability** across 300,000+ VMs.
- Build dashboards for evaluating & **monitoring the infrastructure & tooling** throughout the migration project using Kusto & Azure Data Explorer, reducing incident detection time by 70% & manual reporting time by 5+ hours/week.

Trinity School of Engineering (College Green, Dublin) – Engineering Research Intern — 06/2024 – 08/2024

- Collaborated in developing an **AI Chatbot** for student inquiries on procedures, course structure, exam, etc.
- Researched & scored the **susceptibility to AI enhancement** in 50+ modules using 20+ metrics & data analysis.
- Administered a **data visualization dashboard** for actionable insights, optimizing operation tracking by 80%.

Vodafone (Central Park, Dublin) – Full Stack Engineering Intern — 06/2023 – 08/2023

- Engineered **backend microservices & APIs** with Object-Oriented Programming (OOP), Java, Apache Maven, Quarkus, DevOps, Kubernetes, Postman, Docker, AWS, REST, Nexus, Jenkins, & GitHub & parts for a **customer service AI chatbot** with TypeScript, Yarn, Figma, Sass (SCSS), Node JS & React JS in a SAFe environment.
- Implemented SQL queries for **data extraction & transformation (ETL),** optimizing data workflows by 40%.
- Chaired an automated process for **validating & processing** 13000+ accounts & **reporting** on Linux systems, saving 150+ hours / week, resulting in 85% reduction in Opex & increase in **data processing speed** by 2.5x.

Trinity Global (College Green, Dublin) – Trinity Global Ambassador (Part-Time Job) — 08/2023 – Ongoing

PROJECTS ON GITHUB

Autonomous Vehicle w/ Embedded Systems: Engineered a model autonomous vehicle using C++, Arduino Uno, **IoT sensors**, Track & **Object following**, speakers for accessibility, **networking** for a web GUI & **Computer Vision** for real-time navigation.

Financial Portfolio Forecasting System: Developed a tool leveraging Monte Carlo **simulations**, Scikit-learn & **Yahoo Finance** API to forecast portfolio **returns & analyse risk** across diverse asset classes using data science & statistical modelling.

TECHNICAL SKILLS

C / C++: Boost, CMake, Conan, Vcpkg · FPGA: Verilog, Vivado, Matlab · Python: Scikit-Learn, TensorFlow, PyTorch, Neural Networks - CNNs, RNNs, LSTM, NLP - Natural Language Processing, LLM - Large Language Models · RDBMS: SQL, MySql · Assembly · Shell Scripting: PowerShell, Bash · JavaScript· MATLAB · Git · Linux, Unix · Software Defined Networking (SDN), Routing protocols, DNS, Load Balancing, ARP, gRPC, TCP, UDP, IP, WireShark · MCP, A2A, GPU acceleration- Nvidia CUDA

HACKATHON AWARDS

AWS Breaking Barriers w/ Agentic AI - MegaPort Prize ($1000): Build Baymax, a networking observability agent / doctor w/ MCP & A2A. Monitors infrastructure, diagnoses issues via NLP & automates planning, remediation for proactive management.