Navpreet Singh

ns.2004@outlook.com — Portfolio — GitHub — LinkedIn — +44 7393 324 830 — Birmingham, UK

Final-year BSc Computer Science student (graduating June 2026) specializing in high-performance, real-time systems and algorithmic optimization. Proven track record building lightning-fast applications handling 20K+ TPS and real-time processing at 26 FPS. Passionate about applying cutting-edge technology to solve complex computational challenges. Experienced in leading cross-functional teams and contributing to major open-source frameworks.

Technical Skills

Languages: Python, Java (advanced) — JavaScript, SQL, HTML, CSS
Technologies: React.js, Node.js, Flask, AWS, Docker, Git — Pandas, NumPy, Spring Boot
Practices: Agile/Scrum, TDD, CI/CD, Code Reviews, Performance Optimization
Databases & Cloud: SQL, NoSQL, Data Pipeline Design, AWS Lambda, DynamoDB

Education

Aston University - BSc(Hons) Computer Science *Sept 2023 – June 2026*
Degree Average: 73% — Key Modules: Software Engineering, OOP, Data Structures & Algorithms, ML, AI

Experience and Projects

Open Source Contributor - LangChain AI Framework *GitHub PR*

- Identified and resolved critical architectural limitation in LangChain framework (50,000+ GitHub stars) preventing combination of structured output and tool binding workflows
- Engineered backward-compatible solution with intelligent pattern detection and unit testing, enabling previously impossible AI application workflows affecting thousands of developers

LifeBridge - AWS Hackathon *GitHub*
Jun 2025 – Jul 2025

- Engineered ML pipeline delivering 26 FPS real-time medical sign-language detection with 94% accuracy using MediaPipe
- Deployed scalable AWS infrastructure handling 500+ concurrent users with 99.9% uptime
- Achieved 300ms load time and 95/100 Lighthouse performance through systematic optimization

Movie Recommendation Platform *GitHub*
Dec 2024 – May 2025

- Architected 5,000+ line serverless stack on AWS Lambda and DynamoDB serving recommendations to 100+ MAU with sub-300ms page loads
- Developed collaborative filtering algorithms, improving user engagement by 78%

Peri Palace - Team Lead *GitHub*
Sep 2024 – Mar 2025

- Led agile team of 9 engineers using Scrum, achieving 95% sprint completion rate
- Engineered backend sustaining 20,000 TPS using Java Spring Boot and optimized MySQL

Certifications

Building Transformer-Based Natural Language Applications - NVIDIA *May 2025*
Getting Started with AI on Jetson Nano Workshop - NVIDIA *Dec 2024*