Talha Masood

Full-Stack Software Engineer

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Summary

Full-stack engineer delivering scalable web applications, infrastructure, and multi-agent LLM workflows: graph visualization and PR preview systems at Proxima Fusion, test automation at Mercedes-Benz, property platforms at Dubizzle. TypeScript, React, FastAPI, Node.js, Python.

Experience

Software Engineer, Working Student May 2026 - Present
Proxima Fusion *Munich, Germany*

- Built a **React Flow + Dagre** graph engine with isolated rendering and state layers; designed an aggregation algorithm that preserved task lineages and nested subgroups, cutting visible graph complexity by **96%** (**1,388 → 52 nodes).**
- Developed a **React** and **FastAPI** task-run explorer with paginated **SQLAlchemy** APIs and **Pydantic** filters, enabling scientists to isolate failed, slow, branch-specific, and uncommitted computations.
- Implemented an authenticated FastAPI file upload workflow that converts STEP and other uploads into deduplicated data objects, validates and links them to objects and groups, and records user notes and tags.
- Automated pull-request deployments with **GitHub Actions**, **Terraform**, and **Google Cloud Run**, delivering staging-equivalent environments in ∼**5 minutes** for scientists and engineers to preview PR changes instantly.
- Standardized frontend testing with **Vitest**, **React Testing Library**, reusable provider helpers, and typed API stubs, reducing test setup from approximately **20** lines per file to one helper call.

Software Engineer, Working Student Sep 2024 - Apr 2026
Mercedes-Benz AG *Sindelfingen, Germany*

- Built a **Vue.js** dashboard for an internal vehicle antenna measurement and analysis platform, visualizing test results and reducing manual review time by **80%** for a team of six test engineers.
- Shipped a **Node.js** concurrency scheduler across available antenna test benches, increasing execution throughput by approximately **70%**, from approximately **25** to **44** tests per day.
- Containerized services and established **Jenkins CI/CD** pipelines, improving deployment consistency and reducing deployment time to ∼**6 minutes**.

Full Stack Developer Oct 2021 - Apr 2024
Dubizzle Labs *Lahore, Pakistan*

- Built and scaled Profolio, a property management platform (mobile + web) using **TypeScript, React Native, TanStack Query, PHP Laravel, and AWS**, serving **100K+** users across the UAE.
- Increased real estate agent conversion by **20%** by developing the **TruLeads™** feature with React Native and **Elasticsearch** for intelligent property lead categorization.
- Developed ProConnect, a property-transaction collaboration module with real-time communication used by approximately **10,000 real estate agents in the UAE**.

Education

University of Stuttgart Stuttgart, Germany
M.Sc. Computer Science *Apr 2024 - Expected Oct 2027*

National University of Computer and Emerging Sciences Lahore, Pakistan
B.S. Computer Engineering (Gold Medal, Dean's List, 6 semesters) *Sep 2017 - Jul 2021*

Projects

Multi-Agent LLM System for CAD-Model Creation | *Next.js, FastAPI, CadQuery, vLLM, Docker/Apptainer*

- Built a **three-agent pipeline** comprising reasoning, generation, and feedback agents that converts natural language prompts into executable **CadQuery** code and exportable STEP, STL, and PNG artifacts.
- Delivered the system through a **Next.js** and **Three.js** frontend with a FastAPI backend.
- Designed a controlled-ablation evaluation across **3 open-source LLMs** (Qwen2.5-Coder-7B, Llama-3.1-8B, Gemma-2-9B) on 5 CAD tasks of increasing complexity, using point-cloud and Hausdorff distance against ground-truth STL models.

Technical Skills

Languages: JavaScript, TypeScript, Python, PHP, SQL
Frontend & Mobile: React, React Native, Vue.js, React Flow, Redux, Pinia, TanStack Query
Backend & Databases: Node.js, FastAPI, Laravel, SQLAlchemy, MySQL, Elasticsearch, Firebase
AI/LLM: vLLM, agent pipelines, prompt engineering
Cloud & DevOps: AWS, Google Cloud Platform, Docker, Jenkins, CI/CD, CircleCI
Testing & Development Tools: Vitest, Git, GitHub, Graphite, Bitbucket