

Sasha Sutton - Software Engineering

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Education

- Aix-Marseille University** Expected May 2026
Bachelor of Science in Mathematics and Computer Science Marseille, France
• **Relevant Coursework:** Data Structures and Algorithms (Java), Prob & Stat, Object Oriented Programming (Java), Linear Algebra, Calculus
- Middlesex University** October 2023
Bachelor of Arts in Music Production & Sound Engineering London, UK
• **Relevant Coursework:** Acoustics, Mixing, Mastering, Music theory & composition, Sound design, Music software programming, Digital audio production, Live sound production.

Experience

- Micron Applied Dentistry SAS** Sep. 2025 – Dec. 2025
Statistical Data Analyst intern Marseille, France
• Built a **Python data-processing pipeline** to clean and aggregate **126 high-resolution 3D dental scans** with noise filtering and statistical averaging.
• Designed a **reproducibility validation framework** using pixel-wise standard deviation maps, spatial aggregation and a **one-sided Student's t-test** to verify sub-20 µm precision.
• Developed an **automatic anatomical landmark detection algorithm** using cubic polynomial regression and second-derivative analysis to distinguish **soft vs. hard tissue regions**.
• Performed **power analysis and Monte Carlo simulations** and produced **publication-quality visualisations** (3D heatmaps, stacked histograms, Q-Q plots) for PhD thesis validation reports.

- Vista Ball** June 2025 – August 2025
Full Stack developer intern Marseille, France
• Built a scalable inventory management system from the ground up using a modern tech stack (Supabase, Node.js/other backend tech, HTML/CSS/JS).
• Engineered a centralised Supabase database that automated the synchronisation of product data and inventory levels from 5+ supplier feeds, reducing manual data entry by 15 hours per week and ensuring 99% stock accuracy on the live site.
• Built and integrated a custom frontend application into Shopify, dynamically displaying the centralised product data and leading to a 15% reduction in customer service inquiries about product availability.
• Leveraged Airtable and Softr to design and build an internal CRM and automate manual data tasks, streamlining internal operations for the team.

- Fabric London** September 2022 – October 2024
Live Sound Engineer London, UK
• Managed Front of House (FOH) and monitor mixing for a diverse range of performances, including high-profile international DJs, electronic live acts, and full bands, ensuring consistent audio quality across three rooms.
• Configured and maintained world-class sound systems.
• Acted as the primary technical point of contact for corporate clients and event promoters, translating complex technical riders into successful live productions for high-stakes brand activations.
• Troubleshoot and resolved critical signal flow and hardware issues in real-time under high-pressure, low-light conditions, maintaining 100% uptime during 8-12 hour continuous operation windows.
• Coordinated with international touring crews to facilitate seamless stage transitions and technical setups, ensuring strict adherence to sound level regulations (dB limits) and safety protocols.

Projects

- Neural Vision 3D – Interactive Machine Learning Visualizer** | *React, Three.js, Python, FastAPI, NumPy, TypeScript*
• Developed an interactive 3D visualization of a Neural Network from scratch using **React Three Fiber (Three.js)**, allowing users to inspect real-time neural activations in a 784-64-10 architecture.
• Engineered the core inference engine in **Python** using **NumPy** for matrix mathematics, implementing manual forward pass logic with Sigmoid and Softmax activations without high-level ML libraries.
• Architected a high-performance REST API with **FastAPI** to handle real-time digit recognition requests, processing 28x28 pixel arrays for instant classification of hand-drawn input.
- Vector Search Engine (RAG Backend)** | *Python, FastAPI, React, NumPy*
• Built a semantic search engine from scratch, implementing Cosine Similarity via matrix multiplication to rank documents by meaning rather than keywords.
• Engineered a high-performance backend using FastAPI and Sentence-Transformers (BERT) to generate 384-dimensional vector embeddings.
• Deployed a full-stack microservices architecture: Python backend on Render and React frontend on Vercel, connected via REST APIs.

Technical Skills

Languages: JavaScript (ES6+), TypeScript, Python, Java, C, SQL (PostgreSQL, Supabase).
Frontend/3D: React.js, Next.js, Tailwind CSS, Shopify/Liquid, Bootstrap.
Backend/Cloud: Node.js, FastAPI, Express.js, Spring Boot, AWS (S3, EC2, Lambda), REST APIs.
AI & Data: NumPy, TensorFlow, PyTorch, Sentence-Transformers (BERT), Vector Embeddings, Matplotlib, Pandas.
Concepts: Vector Search (RAG), Neural Network Architectures, Matrix Mathematics, Database Normalisation, CRM Automation.

Social Engagements

Achievements: 1st Place Hackathon Winner (AMU 2026).
Memberships: Chess Club and Mathematics Club at Aix-Marseille University.
Interests & Sports: Mountain Cycling, Marathons, Kickboxing, Strategic Games.