VANDAM DINH

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EDUCATION

Engineering Mathematics with a Year in Industry, MEng, University of Bristol 09/2021 — 06/2026

- **Grade:** First Class Honours
- **Relevant Classes:** Computer Programming, Mathematical and Data Modelling, Applied Data Science, Cognitive Artificial Intelligence, Algorithmic Trading, Renewable Energy for a Sustainable Future

A-Levels, Merchant Taylors' Boys School, Liverpool 09/2019 — 05/2021

- **Grade:** A*, A*, A*, A
- **Subjects:** Further Mathematics, Mathematics, Design & Technology, Physics

WORK EXPERIENCE

Software Engineer Intern, Dyson, Malmesbury, UK 09/2023 — 09/2024

- Rotated across Dyson's Cloud Platform and Robotics Simulation teams, developing production cloud infrastructure and Unity-based procedural generation tools for robotics simulation environments.
- Reduced £20,000 in bills annually for Amazon Machine Image scanning by developing and deploying an alternative backup solution using AWS CloudFormation, Lambda and Step Functions.
- Implemented redundancy for production RDS databases with cross-region and cross-account backups via AWS CloudFormation, Backup, Lambda, Step Functions and EventBridge.
- Designed and developed a furniture selection algorithm for rooms to determine optimal quantity of furniture objects and most compatible variation of items using bin-packing and Bayesian optimisation.
- Designed orientation logic for furniture placement, allowing items to automatically align with or face away from walls and surrounding objects.

SELECTED PROJECTS

Sensor-Invariant Grasp Stability Prediction Model (Master's Thesis) - Paper, GitHub 09/2025 — 04/2026

- Developed a MuJoCo simulation pipeline for the ORCA hand and YCB objects, generating physically plausible grasps via energy-based simulated annealing for gravity replay.
- Trained CNN, GRU, and LSTM architectures to forecast near-future grasp instability using only short temporal histories of fingertip normal and shear forces, bypassing the need for raw tactile imagery.
- Evaluated models on unseen objects to achieve 98.43% test AUPRC with a GRU baseline and isolated a 0.01s-window LSTM as an optimal low-latency solution.

Apps for the Light Phone III (Personal) - Website 05/2025 — Present

- Built No Scrolling, a collection of free, open-source apps for the Light Phone III, including Luma, Passes, Weather, Echo, Reverb, Buses, Logger and Zero with Expo, React Native and Kotlin.
- Deployed a web dashboard for Luma with TanStack, Convex, Cloudflare and TypeScript, enabling users to configure tools and install No Scrolling apps from the browser.
- Grew the project into a recognised part of the Light Phone III modding scene, with No Scrolling referenced by Light in its Developer Program announcement and 4,200+ GitHub APK downloads across releases.

Event Scheduling based on Menstrual Cycle Predictions (University) 02/2025 — 03/2025

- Developed predictive models for sleep, cognition, and mood by performing data cleaning, PCA, UMAP, k-means clustering, synthetic dataset generation, and building random forest classifiers and regressors.
- Architected and implemented a Python backend with Flask APIs to deliver prediction and scheduling models, facilitating seamless integration with the frontend.
- Assembled a frontend in Vite and TypeScript, leveraging shadcn and custom components to visualise user metrics, predictions, and calendar events.

Evaluating South West UK Garage Service Coverage with Simulation (University/Aviva) 11/2024 — 02/2025

- Modelled vehicle breakdown scenarios using a discrete-event simulation (SimPy, OSMnx, NetworkX) to assess garage network efficiency and define service areas via traffic-weighted Voronoi tessellation.
- Synthesised a dynamic traffic model by processing UK Department of Transport data, applying a logarithmic function to generate realistic congestion factors for network analysis.
- Optimised garage locations via Bayesian techniques, designing a composite cost function to balance response times and service equity, with potential to cut daily drive time by 40 minutes.

TECHNOLOGIES & MORE

Languages: Python, TypeScript, C#, LaTeX
Framework/Libraries: React, Expo, Astro, PyTorch, MuJoCo
Environment and Tools: AWS, Cloudflare, Unity, Neovim, Blender
Hobbies: Wild camping, Bouldering, Guitar, Music Production