Gaurav Singh
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Professional profile

Software developer at Pay Advantage building payment systems with C#, .NET, TypeScript, and Vue. Research background in applied machine learning and mathematical modelling; previously headed a postgraduate design-computation programme and founded the Experimental Maths Lab.

Technical skills

Software: C#, .NET, TypeScript, Vue, REST APIs, SQL, Git, and Azure DevOps.

Machine learning and modelling: Python, scikit-learn, computer vision, time-series and generative modelling, statistical inference, and nonlinear optimisation.

Experience

2025 - present — Software Developer, Pay Advantage, Australia

- Develop payment-platform software covering recurring billing, direct debit, subscriptions, bank-account runs, card payments, hosted payment pages, and API integrations.
- Work with C#, .NET, TypeScript, Vue, Azure DevOps, and REST APIs.

2017 - 2022 — Faculty Member and Researcher, Srishti Manipal Institute, Bangalore, India

- Headed the Master of Design in Design Computation.
- Founded the Experimental Maths Lab.
- Taught programming, algorithms, machine learning, physical computing, and interaction design.

2018 - 2022 — Design Copilot (Part-time), Topcoder, Remote

Ran design challenges for Fortune 500 clients and guided distributed groups of designers from brief interpretation through final delivery, after several years competing on the platform.

Selected projects

Ink Signal: Designed a collection of five painting-inspired palettes with light and dark themes for code editors, matching file and folder icons, and terminal presets.

Deconstructing Algorithms: Designed and facilitated an undergraduate thesis studio on algorithmic literacy. Supervised five students exploring explainable AI and impact-investment information through research and prototyping.

Education

2023-2025	Master of Information Technology Griffith University, Gold Coast, Australia; GPA 6.31/7 Thesis: “Enhancing Climate Forecasting with Advanced Generative Models for Synthetic AQI Data”, supervised by Dr. Elizabeth Chang.
2013-2015	Advanced Diploma, Innovation & Experience Design Srishti Institute of Art, Design and Technology, Bangalore, India
2008-2012	B.Tech, Computer Science & Engineering JNTU Anantapur, India; First Class with Distinction

Selected publications

A Framework for Visual-Mathematical Literacy in Applied Machine Learning: Why Representation Choices Shape What Models Can Learn. G. Singh, R. S. Dhari. Machine Learning: Engineering, 2026. https://doi.org/10.1088/3049-4761/ae7df3

Techno-Economic Pathways Modeling and Nonlinear Optimized SEEA-ROI Longitudinal Dynamic Simulation for Decarbonizing Australian Heavy Transportation Systems. G. Singh, E. Chang, Y. Karaca. Fractals, 2026. https://doi.org/10.1142/S0218348X26400633

Automated detection of deformation mechanisms in re-entrant honeycomb auxetics using machine learning. G. Singh, R. S. Dhari, Z. Javanbakht. International Journal of Protective Structures, 2025. https://doi.org/10.1177/20414196241281069

Selected recognition

2024	Griffith Award for Academic Excellence (Griffith University)
2024	STEM Professional Gold Achievement (Griffith University)
2017	Topcoder Open Design Champion (India Regionals)

Portfolio: https://gaurav-singh.info · Full academic CV