

Dr. Junaid Farooq

Chief Architect & Vice President of Artificial Intelligence • PhD (AI)

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10+ YEARS IN AI & SOFTWARE ENGINEERING • PhD IN ARTIFICIAL INTELLIGENCE • 2 SAAS → AI-NATIVE TRANSFORMATIONS • 8 PUBLICATIONS • 2 AUTHORED BOOKS

— PROFILE

Hands-on technology executive who unites **deep AI expertise** with **full-stack systems architecture**. As Chief Architect and Vice President of AI at Sprouts.ai, I own technology strategy, platform architecture, and delivery end to end — and I have twice led SaaS companies through the transformation from legacy platforms to AI-native products. I hold a PhD in Artificial Intelligence and stay close to the code, the architecture, and the trade-offs that decide whether a system ships. I build the way the AI era rewards: a **lean, senior team operating at high leverage**, delivering production systems most organisations would staff many times over. I work closely with the CEO and board to set technical direction and strategy, and turn it into shipped, production-grade systems.

— EXPERIENCE

Chief Architect & Vice President of Artificial Intelligence

Apr 2025 – Present

Sprouts.ai

Bengaluru, India · Remote

Own the company's technology vision, architecture, and execution across data platforms, search, LLM systems, and agentic workflows.

- Own end-to-end technology strategy, platform architecture, and the technical roadmap spanning data engineering, vector search, LLM systems, and agentic AI — the final technical authority for system design, scalability, and reliability.
- Architected and scaled a **multi-agent conversational AI platform** powered by an AI semantic-search engine over large-scale, diverse data infrastructure.
- Built the **responsible-AI backbone**: iterative evaluation pipelines combining automated evaluation and human-in-the-loop assessment to keep model behaviour reliable, predictable, and safe in production.
- Established **AI governance**, safety standards, and production-quality gates across all generative-AI deployments.
- Lead a **lean, senior engineering team** — hiring, mentoring, setting the engineering culture, and shipping with high leverage.
- Work closely with the CEO, board, Product, and GTM leadership to align technology with customer outcomes and business strategy; communicate technical vision to executive stakeholders.
- Drove the transition from AI-ready to AI-native systems (autonomous workflows, RAG, decision automation); own IP and patent strategy.

Principal Machine Learning Architect & Head of Artificial Intelligence

Aug 2023 – May 2025

StartUs Insights

Vienna, Austria · Remote

Big-data, AI-powered SaaS platform serving 1,000+ corporate partners including Samsung, Nestlé, and Siemens Gamesa.

- Led the platform's shift from a legacy big-data SaaS to AI-native — architecting a **production multi-agentic AI platform** and a state-of-the-art **semantic search engine** over massive innovation-intelligence data, serving a large global enterprise user base.
- Deployed and fine-tuned LLMs and generative models across high-volume, high-velocity datasets.
- Drove integration of advanced AI to elevate data quality, insight reliability, and analytical depth across the platform.

Machine Learning Engineer & Head of R&D / Research Team Lead

Mar 2023 – Aug 2023

Genie AI, Inc.

Toronto, Canada · Remote

Led R&D for NLP chatbot and automation systems built on proprietary enterprise data.

- Led R&D delivery for production **NLP chatbot systems** using GPT and other LLMs for real-time conversational user support.
- Trained, tested, and optimised NLP models for understanding and generation quality; partnered with engineering on production integration, reliability, and automation initiatives.

Senior & Junior Research Fellow — Artificial Intelligence Lab

Dec 2019 – Dec 2024

Dept. of Electrical Engineering, NIT Srinagar

India

- › Conducted deep-learning and computational-intelligence research underpinning a PhD in AI and 8 peer-reviewed publications, spanning deep learning, forecasting, control systems, and public-health modelling.
- › Provided teaching assistance across UG/PG theory and laboratory courses.

Scientific Editor & Reviewer

Mar 2021 – Present

Editage · Cactus Communications (freelance)

Remote

- › Edited and reviewed hundreds of research and technical papers in AI and engineering for a global author base; received multiple awards for quality, productivity, and client satisfaction.

Machine Learning Engineer

Jan 2017 – Dec 2019

Comp Soft Solutions

Sopore, India

- › Designed, developed, tested, and deployed machine-learning systems; delivered client technical support and technical training.

Automation Engineer

Oct 2015 – Dec 2016

ETA-PCS, ETA STAR Group (now AG PCS Switchgear)

Dubai, UAE

- › Designed, integrated, programmed, commissioned, and tested industrial automation systems; secured the highest-paying on-campus placement of 2015 at NIT Srinagar and was the youngest engineer assigned to a project in the ETA STAR group.

Research Intern

May 2023

Quantum AI Global

Edison, NJ, USA

- › Designed AI-based products and conducted research for IP development; led AI training sessions for the company and subsidiaries; researched quantum computing.

— CORE QUALIFICATIONS

- › **Hands-on technology leadership** — set technical vision and strategy, own architecture across the full stack, and stay in the code and the hard trade-offs alongside the team.
- › **Lean, high-leverage execution** — build and lead small, senior teams that ship production systems most organisations would staff many times over; hiring, mentoring, and engineering culture.
- › **10+ years across AI, ML, and software engineering** — research, enterprise platforms, and production-grade systems, from prototype to scale.
- › **AI architecture & strategy** — end-to-end ownership of AI-native platforms, LLM systems, agentic workflows, and large-scale data infrastructure.
- › **Generative-AI depth** — LLMs, RAG, semantic search, and multi-agent systems deployed in real production environments.
- › **ML engineering** — designing, training, fine-tuning, evaluating, and deploying models, including transformer architectures (BERT, GPT, LLaMA and variants).
- › **Systems & platform architecture** — distributed systems, API design, event-driven and microservice architectures, scalability, reliability, and performance.
- › **Data engineering** — AI-native pipelines for structured and unstructured data at high volume and velocity; vector databases and search (Elasticsearch, Pinecone, Weaviate) with retrieval at scale.
- › **Cloud & MLOps** — AWS and Azure; containerisation, orchestration, CI/CD, and MLOps for reliable production delivery.
- › **Responsible AI, security & governance** — evaluation frameworks (automated and human-in-the-loop), safety standards, and data governance; author of a book on AI security.
- › **Transformation track record** — twice led SaaS companies from legacy platforms to AI-native products; own IP and patent strategy.
- › **Executive communication** — partner with CEO, board, Product, and GTM; translate complex technical strategy for non-technical stakeholders, funders, and partners.

— TECHNICAL SKILLS

Languages Python, C++, SQL, MATLAB / Simulink

AI / ML PyTorch, TensorFlow, Keras, LangChain, Llamaindex, OpenAI, Rasa, Hugging Face transformers (BERT, GPT, LLaMA), NLTK, OpenCV, CUDA

Architecture & Systems Distributed systems, microservices, event-driven design, API design, CI/CD, MLOps

Cloud & Data AWS, Azure, Docker, Airflow, Redis; NumPy, SciPy, scikit-learn, Pandas

Vector & Search Elasticsearch, Pinecone, Weaviate; query-routing strategies for retrieval at scale

— EDUCATION

PhD — Artificial Intelligence

Dec 2019 – Dec 2023

Artificial Intelligence Lab, Dept. of Electrical Engineering, NIT Srinagar, India

Thesis: Breaking Barriers in Forecasting — A Hybrid Deep-Learning Approach to Spatiotemporal Dynamics. Developed novel deep neural architectures for faster computation across scales and complexities.

M.Tech — Electrical Engineering

Aug 2017 – Jun 2019

Dept. of Electrical Engineering, NIT Srinagar, India

Thesis: Adaptive neuro-fuzzy inference systems based frequency control of microgrid.

B.Tech — Electrical Engineering

Aug 2011 – Aug 2015

Dept. of Electrical Engineering, NIT Srinagar, India

— AUTHORED BOOKS

- *ZERO DAY: The Invisible War — Mastering Vulnerability in the Age of Artificial Intelligence* (2025). On security, safety, and responsible technology for AI systems. ISBN 979-8276520100. [Available on Amazon](#).
- *The Art of Code: Tactics and Principles of Clean Code and Architecture* (2024). On engineering rigour, architecture, and the culture of building maintainable systems. ASIN BODMT12M58. [Available on Amazon](#).

— RESEARCH PUBLICATIONS

Deep learning for forecasting & public-health modelling

- J. Farooq & M. A. Bazaz (2020). A novel adaptive deep-learning model of COVID-19 with focus on mortality-reduction strategies. *Chaos, Solitons & Fractals*, 138, 110148. [doi](#)
- J. Farooq & M. A. Bazaz (2021). Deep-learning algorithm for modeling and forecasting of COVID-19 in five worst-affected states of India. *Alexandria Engineering Journal*. [doi](#)
- M. A. Wani, J. Farooq & D. M. Wani (2021). Risk assessment of the COVID-19 pandemic using a deep-learning model for J&K, India. *Environmental Science and Pollution Research*. [doi](#)

Deep learning, control systems & scientific computing

- J. Farooq, D. Rafiq, P. R. Vlachas & M. A. Bazaz (2024). RefreshNet: learning multiscale dynamics through hierarchical refreshing. *Nonlinear Dynamics*. [doi](#)
- J. Farooq & M. A. Bazaz (2023). Deep-learning-based adaptive predictive control of a radar-guided missile. *Defence Science Journal*. [doi](#)
- J. Farooq & M. A. Bazaz (2023). Multiscale autoencoder-RNN architecture for mitigating error accumulation in long-term forecasting. ICETCI 2023 — **Best Presentation Award**.
- J. Farooq & M. A. Bazaz (2021). Deep learning for self-tuning of control systems. ICETCI 2021, IEEE — **Best Paper Award**. [doi](#)
- D. Rafiq, J. Farooq & M. A. Bazaz (2021). Synergistic use of intrusive and non-intrusive model-order-reduction techniques for dynamical power grids. *International Journal of Electrical Power & Energy Systems*, 138, 107908. [doi](#)

— AWARDS, CERTIFICATIONS & PROFESSIONAL ACTIVITY

Awards & Honors Best Paper Award, ICETCI 2021 (IEEE) · Best Presentation Award, ICETCI 2023 · IDB International Fellowship in Engineering, Jeddah (2011–2015) · MHRD, Govt. of India — Research Fellowships for M.Tech & PhD.

Certifications Deep Learning Specialization — deeplearning.ai / Coursera (Neural Networks, Improving DNNs, ML Strategy, CNNs, Sequence Models) · Modern Robotics — Northwestern · A Deep Understanding of Deep Learning; NLP with Python; Rasa Framework; ChatBots & DialogFlow; SQL Bootcamp — Udemy.

Workshops Brain, Computation & Learning (BCL), IISc Bengaluru (2023) · GPU Tutorial on AI & Data Science, NVIDIA, Hyderabad (2021) · Power Electronics in Renewable Energy Systems, NIT Srinagar (2019).

Languages Fluent — English, Urdu, Kashmiri, Hindi, Arabic; basic — Turkish, Persian, Russian.