

Dilawar Singh

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Passionate system engineer and a capable fullstack developer with significant tech lead experience looking for IC roles. I can manage small teams, build teams, and mentor juniors. FOSS contributor and [reviewer](#).

Experience

Senior Engineer, Dognosis, Bengaluru

Jan 2025 – current

- Added SLAM to existing canine kit that generates geo-spatial map to unlock a few more use-cases
- Built data APIs and portals to collect, validate and process medical data replacing spreadsheet
- Setup hiring pipelines, interviewed and hired 5 engineers to increase team sizes to 11 in 3 months

Cofounder & CTO, Subconscious Compute, Bengaluru

Dec 2019 – Dec 2024

- Cofounded a endpoint cybersecurity startup after my PhD and took it through pre-series A
- Hired and led a team of 15 system engineers to build our flagship endpoint security product Shepherd
- As IC, wrote kernel minifilter/drivers, tooling and algorithms to improve security posture and compliance of IoT devices with unreliable network connection.

Research Fellow & GSoC Mentor

2016 – 2018

- Led modeling and simulation of complex neural and chemical systems under minimal supervision, employing and developing cutting edge simulation techniques to earn my PhD
- Added various numerical solvers in [MOOSE](#) simulator that allowed broader use in multiscale problems
- Mentored GSoC participants of INCF for 3 years on GPU/CUDA effort resulting in faster simulations

Firmware Engineer, Kritikal Solutions, Noida

Jul 2009 – Jun 2010

- Implemented Kalman filter based image stabilizer that removed most vibration artifacts from recorded videos

Projects

- Wrote [NCBS Hippo](#) still used by >1000 people on campus. It automatically & "optimally" schedule annual thesis seminars, manages meeting rooms and institute public calendar saving thousands of trips and emails
- Built a [Behaviour Box](#) that automated training session making multiple sessions possible in a day!
- Wrote and maintain a few [rust crates](#): stream processing, WMI interface, a few cli utilities
- Wrote and maintain a few [python packages](#): a popular utility to extract [data from images of plots](#), Notion/Gitlab bridge for internal use, a UI for oscilloscope and a simple plagiarism detector [CodeSniffer](#)
- Wrote python bindings and maintain [wheels](#) for two major C++ academic simulators [Smoldyn](#) and [MOOSE](#)

Skills

Languages: Rust, C++, Python, PHP, Typescript/JS, SQL, \LaTeX . (*familiar*) Haskell, SystemC, Verilog, VHDL.

Libraries & Frameworks: Boost, Win32 API, PyBind11, OpenCV; Python data stack; Leptos; Vue3, React, HTMX; Codeigniter, Laravel; Axum, Actix, FastAPI; [Cordova](#), [Quasar](#).

Simulation & Modeling: KiCAD, OpenSCAD; ModelSim, NgSpice; MOOSE, Neuron, Smoldyn; PlantUML, TikZ;

Tech & Ops: Git, Docker, CMake, PyInfra/Ansible, Shell scripting/Lua; Jenkins/Gitlab Runners; Grafana; eBPF; Packaging (nsis, deb, rpm), [Open Build Service](#);

Databases: PostGreSQL, MariaDB, Sqlite3, DuckDB, VictorialMetrics. Phinx, Alembic, SQLAlchemy, SQLX/Diesel.

Misc: Literature survey and analysis, Parsing, Network Flows, Graphs, Linear Algebra, Combinatorics, Computer Vision, Probabilistic DSA, BDD & Model Checking, DSP, Routing; Android, RTOS, Linux

Education

PhD, Computational Neuroscience, NCBS Bangalore (TIFR Mumbai), India

2019

PhD (withdrawn), Digital Systems, IIT Bombay

2013

MTech, Electrical Engineering (VLSI), IIT Bombay

2009

BTech, Electrical Engineering, Dr. MGR ERI, Chennai

2007