

Dilawar Singh

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Experienced system engineer and capable fullstack developer with significant tech lead experience looking for IC roles. I can manage small teams, build teams, and mentor juniors. Slightly workaholic, FOSS Contributor.

Skills

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

Libraries & Frameworks: Boost, PyBind11, Win32 API, OpenCV, numpy/scipy stack, Leptos; Vue3, React, HTMX; Codeigniter, Laravel, Axum, Actix, FastAPI

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

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: Parsing, Network Flows, Graphs, Linear Algebra, Combinatorics, Computer Vision, Probabilistic DSA, BDD & Model Checking, DSP, Routing.

Experience

Senior Engineer, Dagnosis, Bengaluru

Jan 2025 – current

- Added SLAM to existing canine kit that generates 3D model of arena to enable certain use-cases for demo-day
- Build data APIs and portals from scratch to collect medical data at remote locations
- 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
- Wrote kernel minifilter, core algorithms for cross-platform deployment (Win32, OSX, *nix/Android)

Research Fellow & GSoC Mentor

2016 – 2018

- Added various numerical solvers in [MOOSE](#) simulator that allowed switching solvers
- Mentored GSoC participants for 3 years on GPU/CUDA effort

Firmware Engineer, Kritical Solutions, Noida

Jul 2009 – Jun 2010

- Implemented Kalman filter based image stabilizer to remove vibration artifacts from recorded videos

Projects

- Wrote [NCBS Hippo](#) used by almost everyone on campus to automatically & "optimally" schedule annual thesis seminars. Hippo also managed room booking, institute public calendar. I also wrote accompanying Android App ([Google Play](#)). Hippo saved thousands of trips and emails to academic office.
- Imagine training a mouse without any automation? I built a [Behaviour Box](#) that automated training session making multiple sessions possible in a day!
- I wrote and maintain a few [rust crates](#): stream processing, WMI interface, cli tools etc
- I 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](#) as teaching assistant
- Wrote python bindings and maintain [wheels](#) for [Smoldyn simulator](#) and [MOOSE simulator](#)

Education

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

2019

PhD, Digial Systems, IIT Bombay, **withdrawn**

2013

MTech, Electrical Engineering (VLSI), IIT Bombay

2009