Dilawar Singh

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Experienced system engineer (multiple domains) and 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.

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, SQLModel, SQLX/Diesel.

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

Experience

Senior Engineer, *Dognosis, 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, designed core algorithms, and setup devops for cross-platform deployment

Research Fellow & GSoC Mentor   *2016 – 2018*
- 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 being used by >1000 people on campus. It automatically & "optimally" schedule annual thesis seminars, manages meeting rooms and institute public calendar. Wrote accompanying Android App. Hippo saved thousands of) trips and emails to academic office.
- 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 as teaching assistant
- Wrote python bindings and maintain wheels for two major C++ academic simuators Smoldyn and MOOSE

Education

PhD, *Computational Neuroscience, NCBS Bangalore (TIFR Mumbai), India*   *2019*
PhD, *Digial Systems, IIT Bombay,* **withdrawn**   *2013*
Master of Technology, *Electrical Engineering (VLSI), IIT Bombay*   *2009*