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Shreyas Vinod

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Synopsis

An algorithmically minded individual who reveres the indefinite complexity of the universe and the human mind with a lifelong quest to understand neural networks and their silicon counterparts. A never-ending curiosity and passioning for engineering and robotics and strong admiration for the field of Computer Science as a whole.

Academia

Politechnika Warszawska, Warsaw, PL *2015 – present*

B.Sc., Computer Science

Programming

C/C++ *(preferred: several ten thousand lines)*; Python; Verilog; Java

Noteworthy Projects

Elise *control automation for ROVs and multirotors on embedded platforms* *ongoing*

- Designed for AHTI, an underwater ROV.
- Scalable and adaptable to multirotors and related platforms.
- Multithreading capable to maximise performance of embedded platforms.
- Handles a plethora of sensors, including inertial measurement for PID control.
- Self-stabilisation and movement algorithms.
- Integral displacement calculation.

Cortex *fast and lightweight bitboard UCI chess engine in C++* *December 2014*

- Minimax with alpha-beta pruning.
- Uses processor-native 64-bit integers, or 'bitboards'.
- GCC's low level assembly: incredibly fast move generation.
- Move search efficiency using simple heuristics such as MVV-LVA.
- Zobrist hashing and transposition tables for efficient search.
- Simple, but effective static evaluation for roughly 2000 elo.
- Universal Chess Interface (UCI) GUI protocol supported.
- Intended to be upgraded to self-learning using dynamic evaluation.

Neptune *16-bit custom RISC architecture microprocessor in Verilog* *October 2013*

- Originally designed on a Xilinx Spartan 6 FPGA.
- Microcoded by hand atop a custom MIPS-like architecture.
- Handmade serial display segments with custom protocols.
- Human-readable instruction set.
- Intended to teach introductory assembly to fellow students.

Noteworthy Miscellaneous

MATE Underwater Robotics Competition, *Long Beach, CA, US* *upcoming*

- Team member of the Students Underwater Robotics Association.
- Responsible for control software, electronics and automation.
- PID control from inertial measurement.
- Custom-built PCBs for power and sensors.
- Responsible for ROV control during the competition.

An Introduction to Interactive Programming in Python *November 2014*

Rice University on Coursera, 100%

Interests

Artificial Intelligence; machine learning; behavioural psychology; philosophy; chess; writing; algorithmic, mathematical thinking; and curiosity with a passion

PROFESSIONAL

Freelance writing *as a hobby* *2013 – 2014*

HostUS *web-hosting services* *2012*

Systems Administrator

- Systems administration during the company's genesis.

LINGUISTICS

International English Language Testing System (IELTS) *November 2014*

Reading: 9.0 Listening: 9.0 Writing: 7.5 Speaking: 8.5 Overall: 8.5

Others: Hindi; Malayalam; and Marathi

PERSONAL

Born *19 December, circa. 1997* Nationality *Indian*