Hatim Kanchwala

Pre-final Year • Undergraduate • Electrical Engineering • Indian Institute of Technology Patna

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INTERESTS

Computer Organisation & Architecture • Embedded Systems Design • Adaptive Filters • Neural Networks • Entrepreneurship

SKILLS

PROGRAMMING
C/C++ • Assembly • Verilog • JavaScript • Python • HTML/CSS • LaTeX • Shell • Java • Scala

SOFTWARE
GNU/Linux • git/GitHub • MATLAB • Simulink • Xilinx ISE • Multisim • Synopsys • Pyxis • MPLAB IDE • Proteus • NumPy/SciPy • Eclipse IDE

HARDWARE
Xilinx Spartan FPGA • PIC Microcontroller • TMS320 DSP Chip • Arduino • 8051 Microcontroller • Raspberry Pi • Teensy

LANGUAGES
English • Hindi • Gujarati • Marathi • Urdu • Arabic

EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY PATNA
B. Tech. in Electrical Engineering
2014 - 2018 • Bihta (Bihar), India
CPI: 7.59 / 10.0 (upto 5th semester)

COURSEWORK

Digital Signal Processing • Analog Integrated Circuits • VLSI Design • Embedded Systems • Control Systems • Linear Algebra • Probability & Random Processes • Machine Learning • Finance - Valuation & Investing

PROJECTS

FPGA IMPLEMENTATION OF NLMS ADAPTIVE FILTERING ALGORITHM FOR SIGNAL ENHANCEMENT
FEB. 2017 - PRESENT • hatimak/zephyr
Adviser - Dr Yatendra Kumar Singh

- Implementing Normalized Least Mean Squares (NLMS) adaptive filtering algorithm to extract desired audio from corrupted signal with additive autoregressive noise.
- Prototyping on Xilinx Spartan-3E FPGA in Verilog HDL, with focus towards optimised placing and routing.
- Investigating performance gain by FPGA over typical DSP chip (TMS320).

8085 INSTRUCTION SET ARCHITECTURE PROTOTYPE ON FPGA WITH BASIC PIPELINING
JAN. 2017 - PRESENT • hatimak/marineford
Adviser - Dr Kailash Chandra Ray

- Implementing Intel 8085 microprocessor ISA on Xilinx Spartan-3E FPGA in Verilog HDL. Developing ASM testbenches to investigate performance gain due to pipelining.

FLASHROM
FEB. - AUG. 2016

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FINGERPRINT BASED REMOTE ATTENDANCE SYSTEM
JAN. - OCT. 2015 • hatimak/den-den-mushi

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EXPERIENCE

AFICIONADO VENTURES • Backend Engineer
Startup • FEB. 2016 - OCT. 2016 • Gurugram (Haryana), India

- Purchasing platform connecting restaurants and vendors - helping restaurants procure better quality raw ingredients and products at competitive prices from extensive & diverse collection of vendors.
- Designed asset-light reactive scalable backend architecture for marketplace platform. Used MeteorJS for server, MongoDB for data storage, GitHub for code collaboration, Heroku for web app hosting, mLab for database hosting, and Cordova for cross-platform mobile apps.
- Implemented MVP-stage marketplace platform with bilingual search to look up products in English/Hinglish. Started work on machine learning engine for vendor inventory prediction and predictive restaurant purchase order generation. Proposed and prototyped conversational UX via messaging bot, in lieu of app interfaces.

WEAVE • Co-founder & Product Developer
Startup • JUNE 2015 - DEC. 2015 • Patna (Bihar), India

- Implemented basic prototype of Model Generator in JavaScript - based on user input data and features, Model Generator builds 3D NURBS model of user's body using weighted combination of precomputed basis models.
- Developed model of Cloth Physics Engine that emulates dyanmics for clothes fitted on generated NURBS model - users can try clothes virtually.
- Despite garnering client & investor interest, startup failed because product-market fit was not right.

EXTRACURRICULAR

COORDINATOR, STARTUP RELATIONS • Entrepreneurship Club, IIT Patna

📅 APR 2015 - PRESENT

- Serving as on-campus mentor to early stage startups, helping entrepreneurs develop business plan, choose investor strategy, and network with domain experts.
- Responsible for building connections with startups and investors, and building investor panel for on-campus startups.
- Part of Core Committee for E-Club's flagship annual event, E-Week. Responsible for organizing guest talks, workshops and pitching event in collaboration with Incubation Centre, IIT Patna.