Kushagra Gupta

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Experience

Misty Robotics, Formerly Part of Sphero, Electrical and Computer Engineering Intern *Boulder, Colorado, 2017*

- Built, tested, and programmed embedded boards containing Altera FPGAs and Atmel microcontrollers
- Designed hardware systems including the display format conversion subsystem using an I2C configurable DSI to RGB bridge chip
- Transferred motor control system to the new driving platform and debugged performance issues

ParkWhiz LLC, Software Development Intern *Chicago, Illinois, 2015-16*

- Built a back-end analytics platform to monitor customer actions on the ParkWhiz site and mobile applications
- Utilized Go, Ruby, SQL, and Docker to write and deploy the service to ParkWhiz servers
- Determined ways to use this data to make informed business and marketing decisions

Harvard University's Whitesides Research Laboratory, Student Researcher *Cambridge, Massachusetts, 2015*

- Developed prototypes for pneumatically-actuated walking robots built entirely out of "soft" components
- Designed and assembled an Arduino-based platform on which to automate robot actions
- Conducted research regarding the applications of electromagnetically-induced oscillation in robotics

Education

University of Illinois at Urbana-Champaign, BS. Electrical Engineering, Junior, GPA: 3.93/4.0 *Champaign, Illinois, 2016-2019*

Current Chancellor's Scholar, Engineering James Scholar, and recipient of the Provost Scholarship

Current Classes

ECE486: Control Systems CS431: Embedded Systems CS225: Data Structures CS173: Discrete Structures

Classes Taken

ECE210: Analog Signals Processing ECE220: Computer Systems Programming MATH286: Differential Equations Plus
ECE110: Introduction to Electronics ECE120: Introduction to Computing MATH241: Multi-variable Calculus

Skills

Languages and Frameworks

Experienced: Java, C, Javascript, HTML, CSS, Ruby, Go, SQL, Arduino, Python, Assembly/LC3
Familiar: C++, Android, iOS, MATLAB, Wolfram Language, Google App Engine

Software

Git, SVN, Eclipse, Atom, Adobe Photoshop/Illustrator/Lightroom/Premiere, Inkscape, Microsoft Office, Verilog, Quartus, Altium, LaTeX

Projects

Applications of Electromagnetically-Induced Oscillation in Robotics *Whitesides Research Laboratory, 2015*

- Invented a method to harness the vibrations of an oscillating magnet in order to achieve locomotion
- Created and implemented an algorithm to track a magnet's position in 3D space within an arrangement of electromagnetic coils

Artificial Intelligence Research Using Heuristic Analysis *Illinois Mathematics and Science Academy, 2014-15*

- Designed a simulation to test player actions in risk-reward scenarios
- Implemented a series of artificial intelligence algorithms that utilized heuristics to analyze a game-state tree which achieved a 90% win rate against humans

Extra-Curricular Involvement

Office for Technical Consulting Resources, Consultant *University of Illinois at Urbana-Champaign, 2016-18*

Developed business strategy and technical solutions to solve real-world problems for companies ranging from local start-ups to Fortune 500 corporations

ECE Pulse, Marketing and Design Director *University of Illinois at Urbana-Champaign, 2017-18*

Built Pulse brand and coordinated design and advertising across all platforms for week-long event hosting over a thousand students

Indian Student Association, Creative Design Chair *University of Illinois at Urbana-Champaign, 2016-17*

Organized events to promote Indian culture and built a brand with a social media presence of more than 3,000 followers

Interests

Cooking | Graphic Design | Photography | Music