

RITWIK DUTTA

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Skills & Proficiency

High expertise with 5-6 years' experience in

- Programming Python, C, C++, Java, Linux CLI, Android
- Web Development HTML, CSS, JavaScript, PyMongo
- Web Frameworks HTML5, CSS3, jQuery, Bootstrap, MongoDB, PyMongo, Flask
- Graphics Adobe Photoshop, Adobe Illustrator
- Video/Audio editing Adobe After Effects, Audacity
- IDEs/VC Visual Studio, IntelliJ, Git
- Editors Vim, Sublime Text, VS Code

University Projects

- Carnegie Mellon University SUMMER 2015 42h/w, 8w/y
Worked with Prof. Radu Marculescu in the ECE department on analysis of academic social networks to determine fairness of scientific collaborations
- Georgia Tech SUMMER 2014 42h/w, 8w/y
Worked with Prof. Marilyn Wolf in the ECE department to create a free and open-source full-stack software system for monitoring long-term-care patients in smart homes [[Project Homepage](#)]

Sample Projects

- [Introduction to CS using JavaScript](#) Summer 2015
Educational slides for computer science club explaining computer science concepts, programming constructs, JavaScript syntax, data structures, and algorithms
- [Algorithms in Python](#) Spring 2015
Video lecture for computer science club explaining computer science and programming
- [Max Keyboard Configurator](#) Summer 2014
Paid project for Max Keyboards to develop a web-based e-commerce solutions for creating customized keyboard designs with a variety of different layouts
- [Password manager](#) Spring 2014
CLI-based password manager in pure Python using 256-bit AES encryption
- [GitHub Recommendation Engine](#) Spring 2014
Use GitHub API to fetch best match data based on user "starring"
- [Reverse Polish Calculator](#) Summer 2014
Command line based calculator
- Display Latency Testing at Nvidia Summer 2012
Using photoelectric sensors and HDMI analyzer to test LCD TV response in cinema, vivid, and gaming modes
- [3D Anaglyph Generation](#) Fall 2010
Combining images shot at different horizontal separations into 3D anaglyphs, and using the ITU.BT 500 image quality scale to deduce the optimal distance (2.5") for human viewing

Teams & Leadership Activities

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|----------------------------|---------------|-------------|
| ■ AP CS class TA | Grade 12 | 4h/w, 30w/y |
| ■ President & Lead CS club | Grade 12-9 | 2h/w, 30w/y |
| ■ Robotics camp mentor | Grade 12-9 | 16h/w, 2w/y |
| ■ Robotics team | Grade 12,10-9 | 15h/w, 6w/y |
| ■ Freelance SW Developer | Grade 12-9 | 6h/w, 12w/y |
| ■ Personal projects | Grade 12-9 | 6h/w, 52w/y |
| ■ Programming competitions | Grade 12-9 | 10h/w, 6w/y |
| ■ Captain Counter-strike | Grade 12-9 | 4h/w, 40w/y |
| ■ Science Bowl team | Grade 8 | 1h/w, 25w/y |

Publications

- Ritwik Dutta and Marilyn Wolf, "An Extensible Software Infrastructure for Computer Aided Custom Monitoring of Patients in Smart Homes," *International Conference on Systems and Software Engineering (ICSSE)*, Miami, USA, March 9-10, 2015 [[Paper](#) | [Slides](#) | [Presentation video](#)]
- Ritwik Dutta and Radu Marculescu, "Fairness of Scientific Collaboration Networks in Academic Conferences" ... conference submission pending [[Paper Draft](#)]

Business Ventures

- Software consultancy 2012-present
Software services online for paid projects catering to individuals and small businesses. Eight paid projects implemented and delivered so far to Lytmus, FreshPay, Mantelligence, Max Keyboard
- EduGames Q1 2013
Implemented prototype on Windows platform, did break-even analysis, chalked a business plan, and pitched vision of educational video games to two Silicon Valley investor CEOs; sparked interest, but time commitment to get back with more accurate proof of market interest and projections based on mobile apps on iPhone and Android proved prohibitive

Community Services

- Children's Discovery Museum Grade 12-11 4h/w, 12w/y
Helping children play smarter and improve their thinking skills by asking them intellectually stimulating questions
- Sunnyvale Community Services Grade 11-10 4h/w, 4w/y
Packaging and handing out food to the less fortunate
- Neighborhood Tech Help Grade 12-8
Helping elderly neighbors in my community with setup, maintenance, and upgrade of smartphones, computers, receivers, routers, TV's, and consoles

Interests

- Pop-punk bands, Sci-Fi books, Comedy movies
- Counter-Strike, FPS games
- Guitar, Biking, Karate

h/w = hours per week, w/y = weeks per year