

# 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  
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  
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](#)]

## Personal 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 ranking
- [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

## Team & Leadership Activities

- AP CS class teaching assistant Grade 12
- President CS club Grade 12
- Lead officer CS club Grade 11-9
- Programming competitions Grade 12-9
- Robotics camp mentor Grade 11-9
- Robotics team member Grade 12,10-9
- Captain Counter-strike lineup Grade 12-11
- Science Bowl team member Grade 8

## 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" ... *in preparation for conference submission in Fall 2015*  
[ [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, and Max Keyboard
- EduGames Q1 2013  
Implemented prototype on Windows platform, did break-even analysis, chalked out a business plan, and pitched vision of educational video games to two Silicon Valley investors; sparked interest, but time commitment to get back with more accurate proof of market interest and projections based on iPhone and Android apps proved prohibitive

## Community Services

- Children's Discovery Museum Grade 12-11  
Helping young children play "smarter" by asking intellectually stimulating questions to help build basic motor and cognitive skills
- Neighborhood Tech Help Grade 12-8  
Helping elderly neighbors in my community with setup, maintenance, and upgrades of their smartphones, computers, receivers, routers, TVs, and game consoles

## Interests

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