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 Research

- **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

Activity	Grade	
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