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
  Graduate level work with Prof. Radu Marculescu in the ECE department on networking and analysis of academic social networks

- **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 "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

- AP CS class teaching assistant   Grade 12
- President CS club   Grade 12
- Captain Counter-strike lineup   Grade 12-11
- Lead CS club officer   Grade 11-9
- Robotics camp mentor   Grade 11-9
- Robotics team member   Grade 9
- 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. Six paid projects implemented and delivered so far to Lytmus, FreshPay, Mantelligence, Max Keyboard, and more

- **EduGames**   Q1 2014
  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
  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, TV's, game consoles, and router

Interests

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