

Agata U. Kargol

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Objective

Seeking Software Developer position in the Seattle, WA area, where I could work on user-focused, high-impact, hands-on projects. Experienced with Python, JavaScript, Robotics, Computer Vision.

Education

- May 2015 **Master of Science in Computer Science** *NSF Graduate Research Fellow*
Washington University in St. Louis, St. Louis, MO
Select Coursework: Mobile Robotics, Computer Vision, Computational Geometry, Machine Learning
- May 2011 **Bachelor of Science in Computer Science** *cum laude*
University of Alabama, Tuscaloosa, AL
Minors: Mathematics, Computer-Based Honors Program, Telecommunication and Film

Skills

- Native speaker of English, Polish
- Development experience with Python, Matlab, JavaScript, C++/C
- Experience with crowdsourcing, web development, user interface design frameworks
- Familiarity with GNU/Linux, Robot Operating System (ROS)
- Team management and organizational leadership experience
- Knowledge of web backend feature development, API development, user interface design, image processing techniques, development for robots, machine learning concepts

Professional Experience

- 2012-2015 **Graduate Research Assistant** *Washington Univ. in St. Louis*
Point-and-click Object Manipulation Interface for PR2 Robot
 - Developed point-and-click interface for object manipulation for Willow Garage's PR2 robot to allow the PR2 to act a surrogate for a paraplegic user
 - Learned about robot functionality and limitations, interface design based on user requirements, and the mathematical concepts of robot visual processing
 - Required ROS, Python, C++, Qt framework, OpenCV*Archive of Many Outdoor Scenes (AMOS) Development*
 - Worked AMOS, the world's largest archive of outdoor webcams, which contains over 500 million images
 - Built and managed AMOS crowdsourced tasks with Amazon Mechanical Turk
 - Created RESTful API with Django for creation and management of Turk tasks
 - Developed backend features and optimizations as part of a team*Pedestrian Detection in Webcam Imagery for Public Health Applications*
 - Explored use of existing machine learning tools and algorithms for pedestrian detection in webcams
 - Improved detection algorithms through background subtraction and shadow detection methods

2010-2011 **Research Assistant** *Univ. of Alabama*
Exploring Effectiveness of Using Robots to Improve Retention in Introductory CS Courses
 - Created a simplified Python API to control iRobot Create to collect to data
 - Helped students use Python, and did on-site support and maintenance of the tools

Select Publications

- [1] A. Hipp, D. Adlakha, R. Gernes, A. Kargol, and R. Pless, "Learning from outdoor webcams: surveillance of physical activity across environments", in *Workshop of Big Data and Urban Informatics*, 2014.
- [2] A. Hipp, D. Adlakha, R. Gernes, A. U. Kargol, and R. Pless, "Do You See What I See: crowdsource annotation of captured scenes", in *SenseCam*, 2013.

Outreach and Leadership

- 2013 Invited expert panelist on "*Frameworks to Guide Image Annotations*" at *SenseCam*
- 2012 Participated in the PR2 Workshop held in Freiburg, Germany
- 2012-2013 Held positions of President and Secretary for the Comp. Sci. Graduate Student Association
- 2010-2011 Held positions of Treasurer and Vice-President for the ACM Student Chapter