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Agata U. Kargol

Education

May 2015 **Master of Science in Computer Science** *NSF Graduate Research Fellow*
Washington University in St. Louis, St. Louis, MO
Select Coursework: Advanced Mobile Robotics, Computer Vision, Computational Photography, Computational Geometry, Advanced 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 Polish, English
- 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, machine learning concepts, image processing techniques, development for robots

Professional Experience

2012-2015 **Graduate Research Assistant, Dr. Robert Pless** *Washington Univ. in St. Louis*
Worked with the Archive of Many Outdoor Scenes (AMOS), the world's largest archive of public outdoor webcams, which contains over 500 million images.

AMOS Development

- 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

2011-2012 **Graduate Research Assistant, Dr. Bill Smart** *Washington Univ. in St. Louis*

- 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

2010-2011 **Research Assistant, Dr. Monica Anderson** *Univ. of Alabama*

- Explored effectiveness of using robots and Python in introductory computer science class.
- Created and supported a simplified API to control iRobot Creates

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*
2012-2013 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