Agata U. Kargol

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Objective

Seeking Software Developer position in the Seattle, WA area. Python 2 and 3, RESTful API development, full-stack web development, 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, 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

Languages
- **Native:** English, Polish
- **Proficient:** Python2, Python3, JavaScript, SQL
- **Past:** Matlab, C, C++, bash

Frameworks Flask, Pyramid, Django, SQLAlchemy, alembic, pytest, pandas, celery

Technologies PyCharm, git (preferred), SVN, mercurial, *nix, PostgreSQL, RabbitMQ, Redis, Cassandra, Jenkins

Professional Experience

2015-2017 **Software Development Engineer** *Zonar Systems, Inc.* Seattle, WA
- Zonar Systems is a vehicle telematics company providing fleet management solutions. Member of Pupil Team, which focused on school bus related solutions for parents, dispatchers, and school administrators.
- Built *MyBusVue*, a parent facing web app which provides near-real time bus tracking and student scan information. Architected and built **RESTful API** powering parent-facing web app, Android app, iOS app, as well as dispatcher tools. Stack includes **Python2 (ported to Python3), pyramid, SQLAlchemy, JavaScript, Angular 1.5, celery, Postgres, Cassandra, and Redis**.
- Worked on *Rider Verification*, a bus driver and dispatcher facing solution to provide information about where students should be in real-time. Worked on both **RESTful API** layer and **ETL** process to ingest data from multiple sources (internal and external integration). Stack includes **Python3, flask, SQLAlchemy, Postgres, Angular 1.6, pandas**.

2011-2015 **Graduate Research Assistant** *Washington Univ. in St. Louis*

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
- Developed backend features and optimizations as part of a team
- Django, Python2, JavaScript, Matlab, AWS Mechanical Turk

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

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

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