Agata U. Kargol

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Skills

Languages	○ **Native:** English, Polish
	○ **Proficient:** Python2, Python3, SQL
	○ **Past:** Matlab, C, C++, bash, JavaScript
Frameworks	Flask, Pyramid, Django, SQLAlchemy, alembic, pytest, pandas, celery
Technologies	PyCharm, git (preferred), SVN, mercurial, *nix, PostgreSQL, RabbitMQ, Redis, Cassandra, Jenkins, ansible, Docker, Kubernetes

Professional Experience

2015-2017 Software Development Engineer (Pupil Team) *Zonar Systems, Inc.* Seattle, WA

Rider Verification/Route Board: bus driver/dispatcher facing solution providing feedback on student location

- ○ Acting lead in MVP/Beta phase, with positive feedback both internally and from Beta customer
- ○ Assisted Product Owner in trimming scope for an on-time delivery of MVP
- ○ Coordinated with Android contracting team on technical prerequisites and feasibility of requested features
- ○ Routinely used as test project/team for evaluation of new products, technologies, and processes
- ○ Greenfield project where team owned setup, maintenance, and all work on both infrastructure and software
- ○ Key member of effort to move product to the cloud Google Cloud Platform, Docker, Kubernetes)
- ○ Worked on both RESTful API layer and ETL process to ingest data from internal and external sources
- ○ Stack includes Python3, flask, SQLAlchemy, Postgres, Angular 1.5, pandas, Jenkins, ansible
- ○ First product at Zonar to have >75% test coverage for core components, CI/CD pipeline

MyBusVue: a parent facing web app which provides near-real time bus tracking and student scan information

- ○ Inherited legacy codebase developed by 3rd party
- ○ Team rearchitected, rebuilt underlying RESTful API and backend services, aiming for stability and testability
- ○ First product at Zonar to have automated functional, unit, performance, and E2E tests
- ○ Python2 (ported to Python3), pyramid, SQLAlchemy, JavaScript, Angular 1.5, celery, rabbitMQ, Postgres, Cassandra, and Redis

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

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	

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