Matt Piekenbrock

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Curriculum Vitae available at:

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Education

Wright State University — 2010-Present

Pursuing Masters of Science in Computer Science
Bachelor of Science in Computer Science (2015) w/ Minor in Statistics
Current GPA: 3.83
Relevant Courses to field of interest (Data Mining):

Network Science	Applied Stochastic Processes	Machine Learning	Computational Tools and Techniques for Data Analysis
Theoretical Statistics I	Information Theory	Foundations of Artificial Intelligence	Applied Statistics I & II

Research Focus Areas

Density-based clustering methods, nonparametric density estimation, Markov Chain Monte Carlo (MCMC) optimization techniques, Bayesian inference, random graph modeling, finite mixture modeling, the k nearest neighbor problem

Experience

Web and Complex Systems Lab - Kno.e.sis — August 2015 – Present

Graduate Research Assistant at the Web and Complex Systems, Wright State University

- Density-based clustering in the context of geospatial analysis (R/Rcpp)
- Nonparametric Geospatial Point of Interest detection (R/C++)
- Spatio-temporal Social Network Model of spatial data (R)
- Dynamic Geospatial analysis of wide-area motion imagery (R/Python/Java)
- Presenting biannual technical presentations to project sponsors

Oakland Ridge Institute for Science and Education — June 2014 – Present

Civilian Research Associate at the Air Force Institute of Technology, Wright Patterson Air Force Base

- Computer Vision Project involving a parallelized Iterative Closest Point (ICP) algorithm (C++/CUDA)
- Parallelization of existing atmospheric absorption routines (MATLAB MEX/OpenCL)
- Modeling web navigation patterns using hierarchical Markov Models (R/MATLAB)
- Web interface to viewing 3D models (WebGL/JavaScript [+ HTML/CSS])
- Presenting monthly technical presentations to project sponsors

Southwestern Ohio Council for Higher Education — December 2013 – June 2014

Civilian Research Assistant at the Air Force Institute of Technology, Wright Patterson Air Force Base

- Conversion of nonlinear optimization algorithm to C89 implementation (MATLAB/C)
- Search engine/web application for the Ozone Widget Framework (JavaScript/PHP)
- Implementation of unsplittable flow approximation algorithm (C++/Python)
- Conversion tool from Oracle's Abstract Data Type to XMLType in Oracle's Enterprise DBMS
- Presenting monthly technical presentations to project sponsors

Publications

- Robinson, J., **Piekenbrock, M.**, Burchett, L., Nykl, S., Woolley, B., & Terzuoli, A. (2016, December). Parallelized Iterative Closest Point for Autonomous Aerial Refueling. In International Symposium on Visual Computing (pp. 593-602).
- Burchett, L., **Piekenbrock, M.**, Robinson, J., Nykl, S., Woolley, B., & Terzuoli, A.. (2016, July). Automated aerial refueling: Parallelized 3d iterative closest point. In IEEE NAECON, 2016 (pp. 1-5). IEEE.
- Maurice, M., **Piekenbrock, M.**, & Doran, D. (2015, December). WAMINet: An Open Source Library for Dynamic Geospace Analysis Using WAMI. In Multimedia (ISM), 2015 IEEE International Symposium on (pp. 445-448). IEEE.

Miscellaneous

- National Model United Nations Conference 2014: Outstanding Position Paper
- National Model United Nations Conference 2013: Outstanding Delegation (Individual delegation and team)