

William W. Barbour

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— *curriculum vitae* available upon request

OBJECTIVE

Seeking permanent position in the transportation industry with focus on modern data science and predictive methods such as optimization, modeling, and machine learning.

EDUCATION

University of Illinois at Urbana-Champaign

Expected Graduation: Spring 2020

- Pursuing Ph.D. in Civil Engineering (Sustainable and Resilient Infrastructure Systems)
- Research advisor: Dr. Daniel Work (see references)

University of Illinois at Urbana-Champaign

Degree Conferred: May 2017

- M.S. Civil Engineering (Sustainable and Resilient Infrastructure Systems)

University of Tennessee, Knoxville

Degree Conferred: May 2015

- B.S. Biosystems Engineering (with Honors); Summa Cum Laude

EXPERIENCE

Network Modeling and Analytics Intern, CSX Transportation

Summer 2016

- Integrated disjoint spatiotemporal data sources with infrastructure GIS data for microscopic modeling.
- Performed data analytics and machine learning for operational predictions around train yards.

Graduate Research Assistant, Civil and Environmental Engineering

06/2015 - Present

- Worked, primarily, on data-driven improvement of freight train estimated time of arrival. This work combines historical data and infrastructure models to leverage predictive methods such as machine learning and inverse optimization.

Utilities Engineering Intern, Oak Ridge National Laboratory

Summer 2014

- Conducted various engineering studies concerning mechanical utilities infrastructure and support systems.

Undergraduate Research Assistant, Biosystems Engineering and Soil Sciences Lab

09/2011 - 05/2015

- Worked on projects including underwater and stream-bank video mapping, geo-referencing of visual media, and terrain impact studies of wheeled vehicles (in cooperation with the US Army Corps of Engineers).

Consultant, Hawaii Department of Land and Natural Resources, Division of Aquatic Resources

04/2014-05/2014

- Provided consultation on stream mapping equipment and techniques and demonstrated prototype mapping system

Instructor, UNHO 102: Humanity and the Environment

Spring 2013

Teaching Assistant, BSE 451: Electronic Systems

Spring 2015

Teaching Assistant, HSP 195: Leadership Program

Summer 2013

HONORS AND AWARDS

- Roadway Safety Institute Student of the Year Award (January 2017)
- Department of Transportation Dwight D. Eisenhower Transportation Fellowship (Fall 2016 - 2017)
- Civil and Environmental Engineering Graduate Fellowship (Fall 2015 - 2016)
- University of Tennessee Haslam Scholar
 - Study abroad program to Costa Rica, Spring 2013 and Leuven, Belgium, Summer 2013
- Tau Beta Pi Engineering Honor Society [01/2012 - Present]

PUBLICATIONS (details provided in C.V. - upon request)

- W. Barbour, J. C. Martinez Mori, S. Kuppa, D. Work. "Estimating Arrival Times for US Freight Rail Traffic." submitted to Transportation Research Part C: Emerging Technologies, 2017.
- J. C. Martinez Mori, W. Barbour, S. Kuppa, D. Work. "Predicting Delay Occurrence at Freight Rail Sidings." submitted to the 2018 Transportation Research Board Annual Meeting, 2017.
- W. Barbour, S. Kuppa, D. Work. "Supporting automated operations with improved arrival time predictions on US freight railroads." IRTL Conference on Integrated Transportation, 2016.
- W. Barbour, J. McMillan, E. Moore. "Design of a Mobile Shade and Cooling Structure for Grazing Dairy Herds."
- W. Barbour, P. Ayers. "Integration of Continual Water Parameter Measurement with Existing Aquatic Habitat and Stream-bank Mapping Systems." Honors Undergraduate Research Symposium, 2015.
- W. Barbour, P. Ayers. "Multi-Pass Rut Volume and Applied Power Study." Pursuit Journal of Undergraduate Research, Volume 5: Issue 1, Article 5, 2014.

REFERENCES

- Dan Work, Ph.D., Assistant Professor, University of Illinois at Urbana-Champaign (dbwork@illinois.edu)
- Chris Barkan, Ph.D., Professor, University of Illinois at Urbana-Champaign (cbarkan@illinois.edu)
- Shankara Kuppa, Ph.D., CSX Transportation (Shankara_Kuppa@csx.com)
- Paul Ayers, Ph.D., Professor; University of Tennessee, Knoxville (pdayers@utk.edu)
- Daniel Yoder, Ph.D., Professor; University of Tennessee, Knoxville (dyoder@utk.edu)