

Erol Unal

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EDUCATION

- Georgia Institute of Technology**, Atlanta, GA **August 2016 – Present**
Doctor of Philosophy (Ph.D.) in Civil Engineering
 - Awarded President's Fellowship August 2016
- Purdue University**, West Lafayette, IN **May 2016**
Bachelor of Science (B.S.) in Civil Engineering, Structural Emphasis
 - Awarded full-ride Steven C. Beering Scholarship and Fellowship March 2012
 - Awarded Dean's List and Semester Honors December 2013 – May 2016

EXPERIENCE

- Graduate Research Assistant** August 2016 – Present
Computational Mechanics Group, Georgia Institute of Technology
 - Advisor: Dr. Glaucio Paulino
 - Research interests include topology optimization and additive manufacturing
- Undergraduate Research Assistant** August 2014 – May 2016
Pankow Material Laboratories, Purdue University
 - Designed procedure to create and test the permeability of experimental cement.
 - Characterized reaction of cements exposed to carbonation and varying porosity.
 - Performed data analysis and created automated models to estimate key parameters regarding extent of concrete reaction when exposed to varying deicing salts.
- Teaching Assistant** August 2014 – December 2014
ENGR 131: Transforming Ideas to Innovation 1, Purdue University
 - First-year engineering class introducing general engineering concepts and data analysis software
 - Attended weekly meetings with teaching team to discuss lesson plans and class performance.
 - Graded student assignments and exams and identified trends regarding grade distribution.
 - Staffed office hours and assisted students with class material and homework.
- Ad-Hoc Solar Survey Team**, Purdue University December 2013 – May 2014
 - Performed site study to quantify impact of new structural addition to Purdue's Bowen Laboratory on existing solar panel performance.
 - Met with group members to define and carry out test procedure and data analysis.
 - Compiled findings and results and presented recommendations for possible building designs.
- Freelance Web Developer** Fall 2013 – Present
 - Created responsive users features and content management systems conforming to worldwide design standards for websites with communities exceeding 100,000 registered members.
 - Developed and optimized existing database structures to store and retrieve data efficiently.
 - Utilized version-control software to maintain website uptime and debug proposed code additions.
 - Designed and implemented personal portfolios for academic faculty.

PUBLICATIONS

- Suraneni P., Monical J., **Unal E.**, Farnam Y., and Weiss W. J. (Submitted), Calcium Oxychloride Formation Potential in Cementitious Pastes Exposed to Blends of Deicing Salt, Submitted to ACI Materials Journal, American Concrete Institute.
- Ghantous, R. M., Farnam, Y., **Unal, E.**, & Weiss, J. (2016). The influence of carbonation on the formation of calcium oxychloride. *Cement and Concrete Composites*, 73, 185-191.
- Monical, J., **Unal, E.**, Barrett, T., Farnam, Y., & Weiss, J. (2016). Reducing Joint Damage in Concrete Pavements: Quantifying Calcium Oxychloride Formation for Concrete Made with Portland Cement, Portland Limestone Cement, Supplementary Cementitious Materials, and Sealers. In *Transportation Research Board 95th Annual Meeting* (No. 16-4652).
- Monical J., Villani C., Farnam Y., **Unal E.**, and Weiss W. (2016), Using Low-Temperature Differential Scanning Calorimetry to Quantify Calcium Oxychloride Formation for Cementitious Materials in the Presence of CaCl₂, *Journal of Advances in Civil Engineering Materials*, ASTM, Vol. 5, No. 1, pp. 1-15, doi:10.1520/ACEM20150024.

ORGANIZATIONS

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| ASCE Concrete Canoe, Mixture Design Team | August 2015 – February 2016 |
| Habitat for Humanity, Purdue Chapter, Member | August 2012 – May 2014 |
| West Lafayette High School, Tutor | August 2012 – December 2012 |
- American Society of Civil Engineers (ASCE), Purdue Chapter, Member
American Society for Testing and Materials (ASTM) International, Member
American Institute of Steel Construction (AISC), Member

SKILLS

Proficiency in AutoCAD, C, C++, CSS, HTML, Java, JavaScript, Mathcad, MATLAB, PHP, SQL
Experience with ABAQUS, LabVIEW, Python, R, Revit, TA Universal Instrument Software