Matt Sears, PhD

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Full Stack Developer | Data Scientist | AWS Certified Developer - Associate

I have 10 years of experience developing software and I'm passionate about building high-quality, data-driven solutions. I've published four peer-reviewed papers, I'm a former civil engineer, construction project manager, and I've spent the last 5 years building software to conduct construction productivity research.

Work History & Projects

Senior Manager, Business Analytics and Research
National Center for Construction Education and Research (Remote)
Oct 2019 – Present

- Completely overhauled an antiquated database and reporting system, including a database cloud migration (MSSQL => RDS Aurora Postgres), ETL pipeline, drastically improved data schema, new GraphQL API, new CRUD web app, and dozens of Power BI reports. Resulted in significant cost savings and provided staff and customers with insights that had never previously been possible.

Graduate Research Assistant (PhD Student)
University of Colorado, Boulder, CO
Aug 2016 – May 2020

- Guillermo Nevett and I developed an Artificial Neural Network (ANN) and associated web app for the Colorado DOT that predicted the number of days required to construct highway projects, CDOT and other state DOT's requested that we expand the model after it provided substantially more accurate and consistent estimates than their existing methods
- Developed a web app that applied the decision-making Delphi Method **50x faster** than traditional implementations, results published in a CII-funded research study
- Developed an open-source web app for analyzing and animating eye tracking data to study how construction craft workers read construction drawings, results published in multiple papers

Civil Designer / Engineer in Training (EIT)
Dyer & Associates, Richmond, KY (Remote)
May 2014 – Nov 2018

- Used AutoCAD Civil 3D to draw 3D models and produce plans and calculations for stormwater drainage systems, grading, parking lots, roads, rails, utilities, etc. for new manufacturing facilities and apartment complexes

Construction Project Manager
3D Enterprises, Lexington, KY
Jan 2012 – May 2014

- Technical review and oversight of the construction of municipal water and wastewater treatment plants

Education

PhD, Civil Engineering
University of Colorado
2016 – 2020 (3.9 GPA)

BS, Civil Engineering
University of Kentucky
2014 – 2016 (3.9 GPA)

BS, Construction Management
Eastern Kentucky University
2008 – 2012 (3.8 GPA)

Research Expertise

Construction Productivity, Eye Tracking, Deep Learning

Software Skills

Languages & Frameworks
JavaScript, TypeScript, Node.js, Next.js, Express.js, Meteor.js, Electron.js, Gatsby.js, SQL, PHP, Laravel, Dart, Flutter, Python, R

Backend & Data Engineering
PostgreSQL, MongoDB, DynamoDB, MSSQL, GraphQL, REST, Hasura, AWS Glue, AWS DMS, AWS Athena, Keras, DAX

DevOps
Git, Yarn, NPM, Terraform, Docker, AWS Lambda, ECS, EC2, RDS, CI/CD, Travis CI, Circle CI, Jest, Mocha, Gulp, Grunt, Webpack, Babel, Jira

Front-End & Design
React.js, Bootstrap, Materialize, Sketch, Proto.io, Power BI