Dr. Matt Sears

🌐 **mattsears18.com**   in **mattsears18**

✉ **mattsears18@gmail.com**   ⚙ **mattsears18**

📞 **(859) 358-0908**   R^G **matt-sears**

Full Stack Software Engineer (Backend Heavy) | 10+ YOE | AWS Certified

I am a multi-passionate person with an insatiable curiosity and ❤️ for Efficiency, TypeScript, Clean Code, Developer Experience, Mentoring, Research, Data Science, Woodworking, Skiing, and Vietnamese Coffee.

Work Experience

Lead Software Engineer *SalesRiver (formerly Leadrilla) (InsurTech), Lexington, KY – Remote*
Aug 2021 – Present

- Led a team of seven engineers from Seed through Series A ($3.95MM raised, $15MM Valuation)
- Took ownership of our backend, process, tooling, code quality, code reviews, unit testing, load testing deployments, site reliability, documentation, and training
- Re-architected our backend infrastructure and built a new deployment pipeline, enabling us to transform our single instance web app into a multi-tenant enterprise SaaS app, resulting in **$800k+ new Annual Recurring Revenue** and a new parent company (SalesRiver)
- Mentored engineers on data structures, algorithms, design patterns, security, and best practices
- Collaborated with Product & Design teams to plan new features, ensuring that UI/UX could be developed as efficiently as possible

TypeScript, JavaScript (ES2022), SQL, Next.js, Remix, Node, Express, tRPC, GraphQL, REST, React, Tailwind, React Query, Vercel, Postgres, AWS RDS, DynamoDB, Lambda, ECS, S3, Docker, Terraform, GitHub Actions, Jest, k6, CodeCov, Sentry, BetterUptime, LogTail, Linear, Jira, Notion, Figma, Retool, MetaBase, Power BI

Senior Manager, Business Analytics & Research *Alachua, FL – Remote*
National Center for Construction Education and Research (NCCER) (Education Non-Profit)
Oct 2019 – Aug 2021

- Led a team of five software engineers and business analysts
- Took full ownership of and built the entire backend of a new Single Sign-On Service, including architecture, infrastructure, testing, deployment, migration, monitoring, maintenance, and training
- Completely overhauled an antiquated database and reporting system, including a database cloud migration (MSSQL => RDS Aurora Postgres), new ETL pipeline, drastically improved data schema, new GraphQL API, new CRUD web app, and dozens of reports
- Developed real-time reports and conducted ad-hoc statistical analyses to produce actionable insights for executive leadership

TypeScript, JavaScript, SQL, Next.js, Python, AWS Cognito, Glue, Athena, S3, RDS, DMS, Lambda, API Gateway, Power BI, DAX, Node, Express, REST, GraphQL, Hasura, React, Vercel, Auth0, Material UI, Sketch, Postgres, MSSQL, SSRS, MongoDB, Terraform, GitHub Actions, Jest, CodeCov, Jira, Docusaurus

Software Engineer *University of Colorado (Academic Research), Boulder, CO – Remote*
Aug 2016 – May 2020

- Developed an Artificial Neural Network (ANN) and web app for the Colorado DOT, providing substantially more accurate and consistent estimates of construction durations than CDOT's existing methods, app is now used for all new projects throughout the state
- Developed a web app that applied the decision-making Delphi Method **50x faster** than traditional implementations, results published in a CII-funded research study (Research Team DCC-01)

- Developed [an open-source web app](#) for **animating and analyzing eye tracking data** to study how construction craft workers read construction drawings, results published in 7 peer-reviewed papers

JavaScript, Python, SQL, R, Keras, TensorFlow, NumPy, scikit-learn, OpenCV, Matplotlib, Node, Express, REST, React, Meteor.js, Electron.js, Material UI, Vercel, Auth0, Postgres, AWS RDS, Lambda, S3, Travis CI, Jest

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Civil Engineer *Dyer & Associates, Part-Time, Richmond, KY – Remote*
May 2014 – Nov 2018

- Full site design for new manufacturing facilities ($20MM – $120MM projects), including: site and utility layout, grading and erosion control plans, stormwater systems, retaining walls, minor roads and rails
- Wrote AutoLISP and Visual Basic scripts to automate various parts of our designs in AutoCAD Civil 3D
- Continued developing new features for DirtPlan.com, transforming the app into a full-blown social network for construction professionals. **App acquired by private investor for $300K** (now defunct).

PHP, Laravel, JavaScript, AutoLISP, Visual Basic, SQL, MySQL, phpMyAdmin, AWS S3, PHPUnit, PHPSpec, Faker, phpDocumentor, AutoCAD Civil 3D

Construction Project Manager *3D Enterprises, Lexington, KY*
Jan 2011 – May 2014

- Technical oversight of the construction of municipal water treatment plants ($10MM – $90MM projects)
- Taught myself to code so that I could build an app (DirtPlan.com) to improve our communication processes with architects & engineers. **Saved $30K/year/project** after we started using the new app. Reduced engineering review & approval times from **1-2 months to 2 weeks or less.**

PHP, Laravel, JavaScript, SQL, MySQL, phpMyAdmin, AWS S3, PHPUnit, PHPSpec, Faker, phpDocumentor

Education

PhD, Civil Engineering *University of Colorado, Boulder, CO*	**2016 – 2020**
Relevant coursework: Independent Study – Artificial Intelligence & Computer Vision, Methods in Cognitive Science, Applied Statistics I & II	*(3.9 GPA)*

BS, Civil Engineering *University of Kentucky, Lexington, KY*	**2014 – 2016**
Relevant coursework: Design & Optimization of Construction Operations, Control of the Construction Project	*(3.9 GPA)*

BS, Construction Management *Eastern Kentucky University, Richmond, KY*	**2008 – 2012**
Relevant coursework: Project Organization & Supervision, Principles of Management, Scheduling I & II, Estimating I & II	*(3.8 GPA)*

Certifications

- AWS Certified Developer – Associate, Jul 2019 (Expired Jul 2022)
- Engineer in Training (EIT), Kentucky Board of Engineers and Land Surveyors, Mar 2016

Publications – more work available on [ResearchGate](#)

- "Advanced Eye Tracking Analysis for Investigating Construction Craft Professional Interactions with 2D Drawings." *University of Colorado (Doctoral Thesis)*, Aug 2020, [Link](#)
- "How to Double Productivity." *Construction Industry Institute,* June 2019, [Link](#)
- "Visualizing Eye Tracking Convex Hull Areas: A Pilot Study for Understanding How Craft Workers Interpret 2D Construction Drawings." *ASCE Construction Research Congress 2018,* Apr 2018, [Link 1](#), [Link 2](#)
- "The Impact of Engineering Information Formats on Craft Worker Eye Gaze Patterns." *Computing in Civil Engineering 2017*, Jun 2017, [Link](#)