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## Summary

- Goal oriented; providing the client the desired design, meeting all regulatory requirements, and avoiding gold plating.
- Proactive communicator; keeping the client and fellow engineers aware of any changes, requirements, and roadblocks.
- Technology savvy; promoting use of tools that work for the end goal, whether they be legacy or cutting edge.
- U.S. Air Force veteran with extensive leadership and team player experience.

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## Relevant Work History

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<b>Civil Engineer</b>	<b>WHPacific</b>	<b>2012 - 2014</b>
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***Regional engineering firm focused on enhancing client satisfaction through creative, exceptional service.***

*Tools used:* AutoCAD CIVIL 3D 2009-2014, ArcGIS, Bentley StormCAD, USACE HEC-RAS, EPA LT1ESWTR and LT2ESWTR, Microsoft Office, Microsoft Project, corporate PM tools, R programming language, PMI concepts.

- Managed a small team to design a small half-million gallon-per-day, seasonally operated, water treatment plant incorporating the contact basin and clear well under the main plant. Designed the pumping and treatment systems. Design completed on time and on budget, meeting all of the requirements of the client and regulatory agencies.
- Designed the installation of an emergency chlorine gas scrubber I selected for a water treatment plant.
- Designed the expansion of chemical storage facilities at a water treatment plant to include spill protection, connection to existing facilities, and consideration for plant employee safety.
- Analyze routes for multiple proposed pipelines to include estimates for excavation, material, and work.
- Used AutoCAD CIVIL 3D tools to perform grading and pipe network design for a 64-acre multi-use, municipal park. Considered adjacent existing roadways and irrigation ditches and associated rights-of-way. Use of grading and pipe network tools reduced rework time when the design was changed.
- Design a simple, modular system to insulate building sanitary sewer systems for a new systems being installed in multiple villages in North Slope Borough, Alaska. Design was enthusiastically accepted by the engineering and construction teams for it's reduced cost and lowered impact on workers performing maintenance during winter and was incorporated into other projects within the Borough.
- Investigate appropriate use of AutoCAD tools when creating designs of varying complexity. Communicated benefits and limitations of these tools to senior engineers unfamiliar with them.
- Create simple javascript application to calculate and present above ground, arctic, sewer system preliminary design.
- Extensively used R to rapidly prototype possible potable water sanitation design permutations based on EPA requirements. Drastically reduced the time between design parameter determination and final design decision.
- Converted construction documents originally written in Microsoft Word to L<sup>A</sup>T<sub>E</sub>X. Improved format consistency and reduced editing/maintenance time while enforcing compliance with Construction Specification Institute standards.

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<b>Graduate Research Assistant</b>	<b>Colorado State University</b>	<b>2010 - 2011</b>
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***Public research and land grant university studying agricultural, natural, and environmental phenomena.***

*Tools used:* Microsoft Office, R Language and Computing Environment, ArcGIS, L<sup>A</sup>T<sub>E</sub>X, Surfer

- Use R statistical programming language to develop multiple deterministic and stochastic models using natural, spatial, and temporal variables and their associated uncertainties to estimate daily groundwater return volume and dissolved contaminant concentration. Replaced and expanded scope and depth of hard to update, oversimplified, Excel spreadsheet models. Text and R model code is available for review on <https://github.com/cek Morse>.
- Wrote quarterly and annual reports to state agencies detailing water quality sampling efforts and results to include graphical surface representations of spatial and temporal variability.
- Prepare for and execute multiple high volume water sample events. Perform suspended sediment, river bed sediment, and cross section surveys of multiple river cross sections.
- Aggregate and analyze water quality sample results with respect to spatial and temporal variability. Analyze sediment sample results to determine necessity of further analysis.

- Determine proper tools and techniques for sampling suspended and bed sediment. Determine likelihood of botanical impact on water quality parameters of interest.
- Created automated scripts generating multiple types of graphical and tabular results using common formatting parameters with provisions for integrating into a large, multi-chapter L<sup>A</sup>T<sub>E</sub>X document.

## Engineer Intern, Geotechnical

## Engineering Analytics

## 2009 - 2010

*Civil-Geotechnical firm combining engineering and scientific knowledge and sound project management.*

*Tools used:* GEO-SLOPE SLOPE/W and VADOSE/W, MS Office, MS Excel VBA, MS Word VBA, MATLAB.

- Compiled and summarized geotechnical reports to assist senior/principal engineers in preparing expert witness testimony in support of design and construction litigation.
- Independently collect and document soil samples from test pits and bore holes to include visual color and gradation analysis and preparation for swell/consolidation and other tests.
- Create a first-of-its-kind Excel VBA analysis to determine the appropriate depth to install micropiles for foundation remediation efforts on soils with high swell potential.
- Use SLOPE/W to perform slope stability for open-pit mine closure design, ensuring safety of nearby major roadway.
- Design new and analyze existing design of MSE retaining walls in accordance with Colorado DOT guidance.
- Perform analysis of private and public roadway to include analysis of design, as-built, and existing condition surveys, and concrete and asphalt core lab analysis results.
- Prepare level and site survey reports to include measurements, analysis, and photographs.

## Recent Work History

## Full Stack Developer

## Six Actual

**2014 - 2017**

*Software firm specializing in custom web, cloud based, and mobile solutions for private and public entities.*

*Tools used:* Java, TypeScript, JavaScript, Spring, AngularJS, Angular2+, JUnit, Karma, QueryDSL, Spring Data, Hibernate, MongoDB, MySQL, SQLite, REST, J2EE, XML.

- Created multiple portlets for a large, complex, web application and wrote the supporting server-side business logic to retrieve and display data from multiple MySQL tables simultaneously.
- Developed internal, web-based, project management and cost tracking application utilizing multiple technologies and including full unit and integration testing.
- Modified Maven files in an aggregator project by using a dedicated project module to contain and distribute dependencies and versions to ensure development consistency. Worked with architects and senior engineers to determine the appropriate dependency versions and their inter-dependencies.
- Worked with architects and senior engineers after hours to develop an open-source framework to be used as a spring-board for developing projects within the company. Framework included security, messaging, unit and integration testing, database, server side, and client side components. Increased ability to rapidly prototype a project concept for marketing purposes and decreased project development startup time.

## Education

- **Civil Engineering, B.S.**, University of Central Florida, 2008
- **Vehicle Maintenance, A.A.S.**, Community College of the Air Force, 2003

## License

**Engineer Intern**, Florida License Number 1100016322

## Volunteer Work

- Youth softball assistant coach teaching all aspects of play (except pitching), encouraging the love of a sport.
- Informal coding coach for a small group of local kids, focusing on basic skills using Minecraft and Code Combat.