Taten Hall Knight

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Software and Mechanical Engineer

Spearhead multidisciplinary & novel approaches to increase workplace efficiency

Pragmatic self-starter that designs tools and models using current technology to solve complex problems with combination of engineering knowledge and computer science programming methods. Leverage experience in engineering lab research, computer science, athletic leadership positions, and high-pressure industrial environments to create and progress positive and attainable work goals and communicate essential information to teams of different backgrounds and exposure levels.

- **Cost Analysis & Control**
- **Economic Analysis**
- **Technical Communication**
- **Project Management**
- **Product Testing**
- **Training & Development**

Technical Skills

Javascript | React | Redux | HTML | CSS | Git | Postgresql | Sequelize | Python | Flask | Docker | Android Studio | Java | MATLAB | SOLIDWORKS 3D Design | Arduino

Work Experience

EXXONMOBIL, Oklahoma City, OK   2019 - 2020

Facilities Engineer

Lead operations team to positive production and safety outcomes through engineering technical and economic analysis on ongoing projects.

- Constructed field-wide pipeline pressure simulation, employing Synergi software and GIS data providing accurate predictions of pipeline modification effects on key pressure indicators and flow rates, subsequently deploying model data to alert field teams to effects of modifying large natural gas gathering system (200 MCFD ~ $350K/day).
- Trained members of engineering team on Synergi software, enabling midcontinent team to devise models for 2 additional gathering systems and related assets.

EXXONMOBIL, Kemmerer, WY   Summer 2018

Facilities Engineering Intern

Utilized operations, engineering, and maintenance team knowledge plus educational experience to develop more efficient processes.

- Implemented new logical operator control system and opened opportunity for machine surveillance, downtime mitigation, and upgrade justification for CO_2 sales compressors, extending logic to other meters and reducing volume flow discrepancies ~3%.
- Deployed advanced data analysis to identify root cause of major issue within CO_2 sales compressor, consequently recommending and overseeing maintenance on machine, restoring to original capacity, recovering $10K/day.
- Determined best solution for pre-diagnosed vessel seal leaks and worked with contractors, vendors, and maintenance team to eliminate future downtime events, saving $300k/year.
- Created desktop and mobile data visualization screen and corresponding logic, notifying management and technical teams of 10 current plant constraints and allowing for focused optimization efforts.

BELMONT ENERGY RESEARCH GROUP, Laramie, WY   2017 - 2018

Undergraduate Researcher

Devised and executed experiments under supervision of mechanical engineering faculty member.

- Tuned visible spectrum spectrometers to construct gas-phase temperature lookup curves for high temperature silicon carbide fibers in a hot flame based on 1 Nikon .RAW or .TIFF images, forming consistent foundation for future experimental calibration.
- Developed 2 algorithms in MATLAB, providing critical information to final analysis of thin filament pyrometry problems.

UNIVERSITY OF WYOMING ATHLETICS DEPARTMENT, Laramie, WY   Fall 2017

Tutor

Enhanced athlete's performance in engineering and math courses through carefully developed lesson plans.

- Tutored 4 athletes with various learning styles and personalities in differential equations, linear algebra, and engineering problem solving, ensuring knowledge of vital engineering concepts and course success.

GENESIS ALKALI, Green River, WY   Summer 2016, 2017
Shore Operator
Kept melter and lakeside section of plant within operating specifications and performed routine maintenance on minor equipment.
- Utilized control systems to maintain chemical balance of Sodium Bicarbonate, Sodium Hydroxide, concentration of Alkali product in 2.5K gallons/minute of solution, and output of steam to product melting tanks, upholding production value in 2 separate facilities in a self-directed role.
- Acquired certification on and endorsed by 2+ supervisors in safe operation of waste lake barge and heavy machinery such as front-end loader and water truck, sustaining fuel and oil levels of lake dredge and large-scale site cleaning and upkeep.
- Handled pneumatic tools including impacts and grinders, replacing 2 sets of separation screens on monthly basis, preventing loss of production through inadequate screening.

Projects

PERSONAL PORTFOLIO LIVE LINK   2021 - Present
3D showcase of resume experience and project work
Contributions: Custom built state management for 3d controlled input forms and text wrapping, mapped locations from Google Places API to elevation map, and created scene lighting and fog effects
Primary Technologies: React, Redux, Flask, SQLAlchemy, Postgresql, Threejs, React Three Fiber, Google Places API

RESUME BUILDER LIVE LINK   2021 - Present
Application for streamlined custom resume building
Contributions: Complex state management and conditional rendering and formatting of the resume templates, adding and removing resume fields, and dynamic real-time preview of final resume and associated styling
Primary Technologies: React, Redux, Flask, SQLAlchemy, Tailwind CSS, Postgresql

SOURCED (ETSY CLONE) LIVE LINK   2020 - Present
Social marketplace application focused on supporting and providing exposure for small vendors
Contributions: Live search algorithm, follow users, favorite products, leave comments and reviews, dashboard with product categories, add items to cart, and capture order items on submission
Primary Technologies: React, Redux, Vanilla CSS, Sequelize, Postgresql

GOODEATS (GOODREADS CLONE) LIVE LINK   2020 - Present
Recipe browser and organizer
Contributions: Dynamic styling of cookbook page with pug template engine, ability to create new cookbooks and add recipes to each cookbook, and to update the status of a recipe
Primary Technologies: Vanilla CSS, Sequelize, Postgresql

WALLZ ANDROID APPLICATION LIVE LINK   2019 - 2020
2D original arcade game
Contributions: Developed an original idea from a functional script to an object oriented Android Application using Android Studio with Java, implementing Google Admob and XML, and managing release of application via the Google Play Store
Primary Technologies: Java, Android Studio, Google Admob Api, Android Emulator, XML

Education

- **Master of Science (MS)**, Computer Science, Concentration: Artificial Intelligence, Lewis University, Romeoville, IL
  - o Expected Graduation, Winter 2022
- **24 Week Software Engineering Bootcamp**, App Academy
  - o Graduation, March 2021
- **Bachelor of Science (BS),** Mechanical Engineering, Minor: Engineering Honors Program, University of Wyoming, Laramie, WY
  - o Spring 2019

Volunteer Experience

UW MEN'S CLUB SOCCER TEAM, Laramie, WY
Vice President
Work alongside and delegate tasks to other members of council.
- Collaborated with team of 4 officers, establishing and maintaining $8K budget for soccer club.
- Designed and oversaw 6 hours of practice per week, planning to run smoothly and increasing effectiveness.