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Jake Francis

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Programming Projects

- **Tetris -** Fully responsive javascript implementation of the classic falling block game. Touch controls are implemented for mobile users. The game mechanics were recreated from existing games, and the rules found on tetris wikis. - Javascript, HTML, CSS
- **Alarm Paging System -** Frontend web app that allows chemistry technicians to create alarms that will automatically send sample reminders to their personal pager. A separate plant paging website was analyzed with chrome development tools to reverse engineer the form data needed to send messages to pagers. - Javascript, HTML, CSS
- **NASA-APOD -** A infinitely scrolling React website that displays the NASA API astronomy picture of the day, from the current date backwards. The backend serves as a proxy server to keep the NASA API key secret. New requests to NASA are cached into a MongoDB before being sent back to the frontend. - React, Express, MongoDB, NodeJS

Technologies and Languages

- Javascript, HTML, CSS, NodeJS, React, Axios, Express, MongoDB, Cypress, Jest
- Linux CLI, Bash, Git, Github, NPM, Adobe Photoshop and Lightroom

Employment

Senior Chemistry Technician   **Cook Nuclear Station / AEP**   **2016-Present**
- Performed 24/7 shift coverage as the Lead Technician responsible for monitoring and maintaining the chemistry of Cook's two units that supply energy to power more than 1.5 million homes.
- Achieved excellent understanding of complex plant systems, their interaction, and their potential effect on overall plant chemistry.
- Developed a frontend web paging alarm system to alert chemistry technicians of off-normal legally required samples.

Chemistry Technician   **Fort Calhoun Nuclear Station / OPPD**   **2014-2016**
- Monitored system plant chemistry, and plant effluents in accordance with technical specifications, state and federal regulations.
- Designed a chemical analysis that verified a cheaper supplier of sample bottles would not compromise established testing protocols via chemical contamination, which in turn saved the department $17,000 a year by switching suppliers.

Chemical Analyst   **Corbion**   **2012-2014**
- Verified chemical products met internal and external QC/QA standards.
- Redesigned a chemical analysis that had a 50% QA passing rate and increased it to nearly 100%. Saving about four man hours per analysis performed.

Education

Crete, Nebraska   **Doane University -** *B.S. Chemistry*   **2007-2012**
- Publication: Sulfonated Ni(II)porphyrin improves the detection of Z-DNA in condensed and non-condensed BZB DNA sequences