Abraham Alkhatib

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EDUCATION

University of Illinois at Urbana-Champaign **Expected 05/2025**

- Bachelor of Science, Bioengineering GPA: 3.73/4.00
- **Minors:** Computer Science, Electrical Engineering
- **Skills:** C/C++, Swift, SQL, MATLAB, Python, Java/Kotlin, JavaScript, React, CAD-Autodesk Fusion 360
- **Awards:** Dean's List, James Scholar Honors student**,** Outstanding Freshman Exhibit (2nd)

EXPERIENCE

Wake Forest University School of Medicine

Bioinformatics Intern, Software Engineering **05/2023 – 08/2023**

- Accepted to present at the 2023 BMES National Conference to over 5,500 fellow engineers.
- Embedded a cardiovascular disease prediction AI model on a mobile application using TensorFlow-Lite, improved AI inference time by over 93% from previous generations.
- Improved the interoperability of the research application to power a suite of AI-based prediction models.
- Created a cox-regression model to incorporate meta-factors such as BMI and age while accounting for time-to-event data to create a more comprehensive risk score.
- Optimized the risk prediction pipeline for edge devices, decreased ECG processing time to under 25ms.
- Redesigned the user interface to improve intuitiveness and minimize cluster.

Biomedical Engineering Society (BMES)

Technical Director **05/2023 – Present**

- Managed and allocated funding for all technical projects undertaken by BMES.
- Achieved a 50% budget reduction by removing unnecessary committees and increasing virtual events.
- Prioritized exposure and skill development among 200+ members, particularly underclassmen.
- Formulated a new multi-year design project involving undergraduates from several departments.

Engineering Team Lead **08/2022 – 04/2023**

- Awarded 2nd for *Outstanding Freshman Exhibit* during Engineering Open House among 200+ competitors.
- Designed a novel rotational isolation system for bicycle helmets using CAD that offers enhanced protection during angled impacts.
- Orchestrated weekly team meetings to centralize communication and ensure progress.
- Formalized the construction of a testing rig that provides rotational freedom in two axes.
- Coordinated communication between college administration and sub-teams to ensure budget compliance.

Pueblo Supermarkets **01/2020 – 08/2021**

Operations Intern

- Streamlined the integration of newly acquired machinery by intermediating between contractors and store management.
- Shadowed store managers, maintenance crews and other employees.

PERSONAL PROJECTS

Eco-Friendly Flight Planner:

- Worked with a project team to architect an advanced flight planning algorithm, harnessing data from over 14,000 airports and 67,000 routes to determine the shortest path between any two destinations.

Photo Mosaic Board:

- Designed an innovative image-fusion algorithm utilizing k-D Trees to craft PNG mosaics from a collection of photos, resembling any desired image.

Heart Rate Variability Screener:

- Developed a heart-rate variability detection method in MATLAB employing innovative filtering techniques, including Wavelet Denoising and Fast Fourier Transform.

Abe's Page:

- Created an interactive personal-portfolio using React, Tailwind-CSS, and the Spotify API to showcase my professional background along with current favorite songs and albums.