Tanner Nielsen

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Pragmatic problem solver with a sharp eye for detail. Looking to advance my career at an ethical organization working on interesting and important problems.

WORK EXPERIENCE

NextEra Analytics | Saint Paul, MN   *Mar 2019 — Present*
Software Development Engineer II

- Associate SDE (2019) → SDE I (2021) → SDE II (2024)
- Recently served as Tech Lead on a large scale, Rust-based, residential solar monitoring and battery control application
  - ‣ Designed a system using Grafana and Timescale DB to provide real-time fleet-wide insights on the sub-hourly time series telemetry being collected from 70k+ sites
  - ‣ Implemented a robust method of disaggregating VPP (virtual power plant) events into thousands of battery control signals using AWS Step Functions and advanced features of Postgres
- Worked closely with product management to design effective, practical solutions on tight deadlines
- Production-ized ML models developed by our data science and natural science groups

SportsLab360, LLC | Remote   *Mar 2017 — Dec 2018*
Lead Web Developer

- Built the frontend and backend that powers https://sportslab360.com
- Integrated site with other services, such as Mailgun, Stripe, S3 Glacier, and more
- Met regularly with the founder and other developers to strategize and delegate tasks

Granular | Johnston, IA   *Sep 2018 — Dec 2018*
Software Engineering Intern

- Contributed to various codebases maintained by the team, primarily in JavaScript

Abrahamson Nurseries | Stillwater, MN   *Jan 2018 — Mar 2018*
Contract Web Developer

- Built the business website (used for 6 years), complete with a CMS and custom editor tooling

Drake University IT Services | Des Moines, IA   *Feb 2017 — May 2017*
Student Frontend Developer

- Built interfaces for various internal tools used by the IT Services team

Drake University IT Services | Des Moines, IA   *Sep 2016 — Dec 2016*
Student Help Desk Technician

- Handled tech support phone calls and walk-ins from students and faculty

Lakeland Communications, Inc. | Milltown, WI   *May 2016 — Aug 2016*
Tech Intern

- Configured customer routers and modems
- Built web interfaces to increase the efficiency of the internal tools used by the technicians

EDUCATION

Drake University | Des Moines, IA   *Aug 2016 — Dec 2018*
Completed B.A. in Computer Science, Minor in Music

- Graduated early, *summa cum laude*

Cornell College | Mount Vernon, IA   *Aug 2015 — May 2016*
Pursued B.A. in Computer Science and Music

- Studied here for one year before transferring to Drake

PROJECTS

Bowling Hills (store.steampowered.com/app/2125190/Bowling_Hills)   *Dec 2021 — Dec 2023*

Bowling Hills is a casual 3D golf and bowling cross-over game I co-created with Jordan Hendrickson. I only worked part time on the project but made several key contributions, including the terrain generation system, complex procedural shaders, the original soundtrack, and general programming.

Digital Pickleball Scoreboard   *Dec 2023 — Jan 2024*

My parents converted a pole shed into an indoor pickleball court, so for my mom's birthday I made them a digital scoreboard:
- One Raspberry Pi Zero drives an HDMI display and runs the scoring logic. It also hosts a wireless access point for nearby devices to control it (no internet out in the shed)
- Another Raspberry Pi is wired into a control box with buttons for score keeping and mounted to the wall near the edge of the court. This Pi sends signals to the other to update the display.
- A spectator on the sidelines can also control the scoreboard display from their phone with an alternative web interface, connecting to the same access point that the wall-mounted controller does.

TECHNICAL SKILLS

Generally sorted in descending order of experience (depth and recency). Non-exhaustive. **Bold** *indicates a special interest.*

Languages

Rust, **TypeScript**, SQL, Python, HTML, CSS, Shell Script, C#, **Roc**, Gleam, Kotlin, Java, Jsonnet, R, PHP

Systems

OpenAPI, Postgres, **Timescale DB**, **Grafana**, Docker, Unity, Node.js, Raspberry Pi, Arduino, Vercel, Supabase, React, Vue, **Typst**, Web Canvas Graphics, WebGL, Laravel, Kubernetes

AWS

Lambda, **Step Functions**, S3, DynamoDB, SQS, API Gateway, ECS, CloudWatch

Tools

Git, GitLab CI, Terraform, AWS CDK, Markdown, **Mermaid Diagrams**

PERSONAL INTERESTS

Music
- Studied piano, percussion through college; dabble with guitar, bass
- Would have been a composer if I didn't go into tech
- Obsessed with They Might Be Giants

The Outdoors
- Visiting national parks
- Golf (terrible at it)
- Pickleball

Technology
- Cutting edge FP languages
- DIY electronics (Raspberry Pi, Arduino)