

Tanner Nielsen

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

Woodbury, MN 🏠

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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, gRPC & Protocol Buffers, Vercel, Supabase, React, Vue, **Typst**, Web Canvas Graphics, WebGL, Laravel, Redis, 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)