

SOFTWARE DEVELOPER & MECHANICAL ENGINEER

GLENN WINBO SONDELL

ABOUT ME

I'm a mechanical engineer and a self-taught software developer. My multidisciplinary background helps me understand the needs and challenges that people of different backgrounds face. This makes me an excellent developer, problem solver, communicator and team-player.

I can help you with anything from writing firmware in Rust to machine learning in Python. I have great math skills and use them to solve problems related to 3D graphics, modeling and physics simulations.

Background:

I started out as a mechanical engineer, but I have changed tracks towards software development. The reason behind this change was simple, I love to create things and learn about new technologies. In particular I was drawn to software development because it allows for faster iterations. Just compile and you get new a prototype. Even rust compiles faster than a 3D-printer!

While I have more experience using python, I prefer to use Rust whenever possible. Having used mypy in larger projects, I prefer to have strong typing built into the language itself.

SOFTWARE WORK

Professional experience of software development.

Desktop CAD App 2022-08-01 .. ongoing

Created an application for **CerInvent** that allows the user to generate molds for manufacturing dental crowns.

Python

NumPy

SciPy

PyQt

PyMadCad

Gmsh

PyVista

CATIA

GitHub

CI/CD

AI Student Workshop 2022-06-01 .. ongoing

Helped **Alten** attract students by preparing a workshop for Machine-Learning master students. [Repository](#)

Role & Responsibilities

Preparation of source code and data for the event. Deployment example using Flask.

Python

NumPy

Pandas

TensorFlow

Keras

Flask

RNN

GitHub

Docker

DigitalOcean

Medical Device 2021-09-01 .. 2022-02-01

Developed **Multi4**, a device for taking biopsy samples for cancer-diagnostics.

Role & Responsibilities

Firmware for embedded device, mechanical design, prototyping and testing.

Arduino

SolidWorks

Hygiene Device 2021-05-01 .. 2021-10-01

Developed the **Paprtect** prototype, a finger cover dispenser for public touchscreens.

Role & Responsibilities

Firmware for embedded device, pcb design, prototyping and testing.

Arduino

KiCad

MedTech Startup 2020-12-01 .. 2022-12-01

Started the company **Orthovelox AB**, that aims to produce innovative solutions for orthopedic healthcare. Orthovelox develops design software based on 3D scanning.

Role & Responsibilities

Product Development, Software development, Project-Lead, Fund raising.

Python

NumPy

SciPy

PyVista

GitHub

CI/CD

Azure

PyTest

mypy

3D-Modeling

IoT Device 2020-12-01 .. 2022-12-01

Developed proof of concept for **Progressive Safety**.

Role & Responsibilities

Firmware for development boards, testing and PCB cost estimates.

Arduino

c++

BlueTooth

Electric Forklift 2019-03-01 .. 2019-08-01

Helped **Helge Nyberg** develop an electric forklift for indoor use. The forklift uses force sensors instead of a conventional user interface.

Role & Responsibilities

Firmware for processing user input to actions and emulation of inertia.

Arduino

OTHER WORK

Professional experience without software development.

Mechatronic Components 2022-04-01 .. 2021-01-01

Helped **Husqvarna** with product maintenance and development of motor controllers, HMI panels and motors used in handheld battery powered products.

Role & Responsibilities

Coordinated product development between different **Husqvarna** sites and subcontractors. Mechanical design and configuration management of mechatronic components.

CATIA

SmarTeam

Teams

Disposable Medical Device 2020-03-01 .. 2020-06-01

Designed a disposable flashlight for gynecology examinations.

Role & Responsibilities

Mechanical design and testing.

SolidWorks

Automotive Accessories 2018-04-01 .. 2020-04-01

At **Thule** I developed torque keys, load carries and roof boxes. I also developed a friction drilling production method and helped with migration from version control systems.

Role & Responsibilities

Mechanical design, testing, prototyping and production development.

SolidWorks

SmarTeam

YaPdm

Materials Research 2015-08-01 .. 2016-09-01

At **Jönköping University** I supported research activities as a lab-technician.

Role & Responsibilities

CNC-machining, test-rigs, assisting with experiments.

SolidWorks

MasterCam

LabView

MISCELLANEOUS SOFTWARE

Mostly for fun

Delamat.se 2023-09-04 .. ongoing

A sideproject where the plan is to make a website where users can share recipes and shoppinglists. The main purpose of this sideproject is learning how to use htmx and axum in practice. [Repo](#). Website:

Not yet deployed.

Rust

CSS

HTMX

axum

sqlx

GitHub

open-source

halfedge lib 2023-05-24 .. ongoing

I have been frustrated with available libraries for rust and python for boolean operations on 3D-models. Therefore I started this project that aims to provide an opensource rust library with python bindings. The ambition is to provide robust boolean operations on halfedge

datastructures. The project is heavily inspired by the white paper:
[Exact, robust, and efficient regularized Booleans on general 3D meshes](#).
[Repo](#).

Rust 3D-Modeling GitHub open-source

Web Resume *2023-02-01 .. ongoing*

I maintain my resume as a website and the source code is available at [GitHub](#).

HTML CSS Tera Zola SSG open-source GitHub

WASM Web App *2023-01-01 .. 2023-01-10*

Implemented [Conway's Game of Life](#) as a [webb app](#) using rust.
[Repo](#)

WASM Rust HTML CSS GitHub

Python Cad Library *2022-12-01 .. ongoing*

I contribute to the capabilities of [MADCAD](#), an opensource python CAD library.

Python Numpy PyTest open-source GitHub

Daily Driver: NixOS *2022-11-01 .. ongoing*

I use Linux for both work and personal projects. Currently I use NixOS and benefits from the robust development environments it offers.

Linux Nix

Embedded Rust *2022-07-01 .. 2022-10-01*

I made simple data acquisition firmware using rust for stm32 and nrf52 development boards. As a compliment I also made a desktop app to plot values from the devices.

Rust USB nrf52 stm32

The Rust Book *2022-05-01 .. 2022-07-01*

Taught myself rust using the [Book](#) and fell in love.

Rust

EDUCATION

Formal higher education.

Master: Mechanics 2016-08-01 .. 2018-06-01

At **Jönköping University** I studied product development, materials engineering and design optimization.

SolidWorks

CATIA

FEA

MatLab

Visual Basic

Project: Solar Car 2014-08-01 .. 2015-12-01

Designed and built a solar powered car. Competed with the car in the [World Solar Challenge](#), a 3000km long race on the public roads of Australia.

Role & Responsibilities

System Engineering, Battery and Solar Panel design, CNC-machining.

SolidWorks

FEA

MasterCam

Arduino

Bachelor: Mechanics 2012-08-01 .. 2017-06-01

At **Jönköping University** I studied product development, materials engineering and design automation.

SolidWorks

FEA

MatLab

Visual Basic

PLC



LETS TALK

 GlennWSo

 Mail me

 Print format

SKILLS

3D-Modeling

Arduino

axum

Azure

BlueTooth

c++

CATIA

CI/CD

CSS

DigitalOcean

Docker

FEA

Flask

GitHub

Gmsh

HTML

HTMX

Keras

KiCad

LabView

Linux

MasterCam

MatLab

mypy

Nix

nrf52

NumPy

open-source

Pandas

PLC

PyMadCad

PyQt

PyTest

Python

PyVista

RNN

Rust

SciPy

SmarTeam

SolidWorks

sqlx

SSG

stm32

Teams

TensorFlow

Tera

USB

Visual Basic

WASM

YaPdm

Zola