Diego Belusky

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Summary

Highly motivated electrical engineering graduate with a strong foundation in optics, photonics, and software development. Experienced in advanced ceramic analysis using THz-TDS and quantum photonics experiments involving 2D materials. Proficient in programming, data analysis, and control systems design. Seeking opportunities to apply expertise in optical engineering, control systems, or software development.

Education

Zurich University of Applied Sciences (ZHAW) *Sept 2021 – Jul 2024*
Bachelor in Electrical Engineering

- Focus: Optics, Photonics, Control Engineering and Wireless Communication
- Bachelor Thesis: Production and Optical Analysis of 2D Materials for Quantum Photonics Experiments
  - Developed $MoSe_2$ monolayers using tape exfoliation.
  - Conducted photoluminescence spectroscopy and automated reflectivity measurements using custom-built optical systems.
  - Explored applications for optical microcavities to study advanced light-matter interactions.

Experience

Project Lead Intern – Process Optimization *Zurich, Switzerland*
Micarna Seafood *Nov 2019 – Apr 2020*

- Conducted SAP data analysis to improve industrial defrosting processes.
- Researched optimization techniques and proposed procedural improvements.
- Collaborated with teams to implement more efficient workflows.

Electrical Intern *Dällikon, Switzerland*
Kummler+Matter AG *May 2021 – Aug 2021*

- Gained hands-on experience in electrical installations and troubleshooting.

Military Service – Panzer Grenadier *Thun, Switzerland*
Swiss Armed Forces *Jul 2024 – Nov 2024*

- Completed 4.5 months of training and service as mechanized infantry.
- Developed skills in teamwork, leadership, and strategic problem-solving under challenging conditions.

Projects

Production and Optical Analysis of 2D Materials for Quantum Photonics Experiments *github repo*

- Created monolayers of $MoSe_2$ and performed optical testing using photoluminescence spectroscopy.
- Investigated potential for planar optical microcavities to study polarons and quantum effects.

Quality Testing of Advanced Ceramics Using THz-TDS

- Analyzed dielectric properties of ceramics like Al_2O_3 and LTCC using terahertz time-domain spectroscopy. Developed proficiency in material characterization techniques.

Technical Skills

Programming & Software:

- MATLAB/Simulink: Data analysis, signal processing, controller design.
- Python: Automation, numerical mathematics, computer simulation, image processing (OpenCV).
- C/C++: Microcontroller programming, robotics, and controller development.
- Swift/SwiftUI: iOS app development.
- VHDL/Intel Quartus: FPGA programming.
- HTML & Java: Web and software application development.

Engineering Tools:

- Eagle: PCB design.
- LTSpice: Circuit simulation.
- Wireshark: Network analysis and diagnostics.
- Siemens TIA Portal (ST): Production automation.

Languages

- German: Native
- English: Advanced (C1)

Hobbies & Interests

- Hockey: Active player at Academic Ice Hockey Club Zurich (AECZ).
- Music Production: Experience with DAWs for digital composition.
- Fitness & Outdoor Activities: Passionate about strength training and team sports.