Zeyn Schweyk

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Piano Duo: thepianoboys.com, Instagram, Facebook, YouTube, LinkedIn, Music Resume

Personal: zeyn.schweyk.com, GitHub, LinkedIn

EDUCATION

The Johns Hopkins University and Peabody Institute of Music – GPA: 3.75/4.0 — Baltimore, MD

M.E. Robotics — *December 2026 (Expected)*

B.S. Electrical Engineering, Computer Engineering, Computer Science triple major, minors in Music Performance & Applied Math & Statistics — *August 2022 – May 2026 (Expected)*

Santa Barbara City College – GPA: 4.0/4.0 — Santa Barbara, CA

2 A.A. degrees in Math & Science and Liberal Arts as Dual Enrollment High School Student, w/ over 60 GE credits completed — *August 2018 – May 2022*

Engineering Academy at Dos Pueblos High School – GPA: 5.0/5.0 — Goleta, CA

August 2018 – May 2022

EXPERIENCE

Radio Frequency (RF) Software Intern w/ SECRET Security Clearance — Goleta, CA

Toyon Research Corporation — *June 2022 - Present*

- Starlink/OneWeb antenna setup and networking/firewall configurations across many routers with IPSec VPNs
- Electric motor design and testing using Ansys. Built Python codebase that sweeps through various design parameters to optimize performance for specific government contracts.
- Full-stack web app development (React JS and Python) to communicate with on-vehicle ROS nodes for geolocation tracking, sensor data collection, and data visualization, for defense research & testing
- Wrote desktop app to conduct experiments for antennas in an anechoic chamber with servo motors using C#, C++, VS & VS Code, .NET Framework.

Johns Hopkins Algorithmic Trading — Baltimore, MD

Founder, Team Lead of course-credit research group under CS professor — *August 2024 – Present*

- Develop & backtest trading algorithms in Python/C# using fundamental/technical analysis with the QuantConnect platform, Alpaca API, SEC EDGAR, and various other resources
- Compete in national algorithmic trading competitions like QuantLeague – 13th place certificate for Q3, 2025; 22nd place certificate for Q2, 2025
- Combine various strategies/indicators like SMAs, EMAs, Piotroski F Score, MACD, Options (Wheel, Spreads), as well as custom day-to-day/intraday strategies.
- Monitor/consider risk (Sharpe ratio), trading fees, win rate, average gain/loss on each trade, capital allocation, & universe selection. Utilize Bloomberg Terminal to research/validate strategies

Computer Science Course Assistant — Baltimore, MD

The Johns Hopkins University at The Whiting School of Engineering — *Fall 2023, Spring 2025*

- Intermediate Programming (EN.601.220) – assist students in class, hold weekly office hours, grade assignments, proctor exams in C & C++. Pointers, polymorphism, virtual functions…

Mechatronics Programmer for Science Museums across CA — Goleta, CA

Dos Pueblos Engineering Academy — *August 2021 - June 2022*

- Designed and created software for various exhibits to be displayed across museums in California, like the Exploratorium in San Francisco, as a HS Senior
- Implemented and deployed closed-loop feedback control (PID) systems, Apache webservers on Raspberry Pis, CRUD applications, client-server models, Python libraries to PyPI, and used Arduinos, various sensors and motors, and input devices
- Designed exhibit components with SOLIDWORKS and machined them w/ lathes, mills, & laser cutters, as needed
- View my personal site for a more detailed description of projects

Software Contractor — Santa Barbara, CA

Santa Barbara Control Systems, Chemtrol Division — *December 2020 - May 2021*

- Designed and created a time-clock system, suitable for any mid-sized company, used daily by employees and management w/ Python & SQL
- Implemented multiple versions of desktop applications compatible w/ Windows, Mac, & Linux. Dealt with Facial Recognition for automatic clocking in/out, automatic emails/alerts/database backups, regular employee reports linked to payroll, wage calculations, vacation & sick accrual & taken, tasks by employee & department, random motivational quotes, English & Spanish translations, and much more
- Pitched and sold system to CEO

ThePianoBoys (aka SBPianoBoys) — California

Classical Piano Duo w/ my brother — *January 2014 - Present*

- Perform solo, four-hands, & two-piano repertoire regularly at various venues, teach music to all ages, and compose and arrange works
- Competed in & won countless performance competitions, state level composition competitions, & various music festivals across CA, individually and as a duo
- Chamber music & solo piano at Peabody Institute and The Music Academy of the West under faculty from Juilliard, Curtis, University of California Santa Barbara (UCSB), and others

ACHIEVEMENTS

- '25 JHU William H. Huggins Award in ECE
- '22-'26 JHU Clark Scholar Member & Recipient
- '22 Student Elected Representative for Mechanical engineering Undergraduate Student Council (MUSC) at JHU
- '22, '25 Santa Maria Philharmonic Showcase Winner & Concerto Performer
- '21 AP Scholar w/ Distinction
- '21 FIRST Robotics Tidal Tumble Semifinalist
- '21 Santa Barbara Double Piano Concerto Competition Winner
- '20 Music Teachers' Association of California (MTAC) Composers Today Symposium State Level Finalist
- '18 Jr. High Chess Tournament District Winner
- '18 Mock Trial Team County Winner as Pre-trial attorney
- '15 Jr. Black Belt in Kung Fu

SPECIALIZED SKILLS

- **Programming languages:** C, C++, C#, Python, Java, MATLAB, SQL, JavaScript, HTML, CSS
- **Design:** SOLIDWORKS, OnShape, & basic CAM software, Logisim, LTspice, Wordpress
- **Manufacturing:** Lathe, Mill, Band Saw, Laser Cutters, 3D Printing, Soldering
- **AWS:** Lambda, API Gateway, EC2, Lightsail
- **Business:** Business Operation & Marketing, Event Planning & Coordination, Public & Motivation Speaking, Bookkeeping, Microsoft Office / Google Suite
- **Other:** PID loops, DNS Records, HTTP Requests, APIs, Backend/Frontend programming, Apache/NGINX Web Server Setup, Makefiles, gdb, Valgrind, Git, GitHub, GitLab

LEADERSHIP & INVOLVEMENT

- JHU Racing Club (Baja) Electronics/Software teams (see Experience section on personal website), Robotics Club, stock/options services for friends/family, mobile app development with React Native for various JHU startups, AIAA, classical music improv & composition, tennis, pickleball, and cross country