Coriander V. Pines

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Key Skills

Programming Languages: .NET/C# · Python · NumPy/SciPy · C++ · JUCE · OpenGL · MATLAB · SQL

Digital Signal Processing: Nonlinear Techniques · Audio Synthesis and Effects · Sensor Fusion · Image Processing · Analog System Modeling · Realtime Systems · Stability Analysis

Software Engineering: Asynchronous Programming · Architecture Design · Defensive Design · Continuous Integration · Testing Strategies and Automation · Embedded Systems · Resource–Constrained Environments · Performance Optimization · Git · Numeric Simulation · Data Acquisition and Conditioning · Backend Web Development

General: Technical Writing · Academic Research and Analysis · Data Visualization · Rapid Prototyping

Work Experience

Slime Child Audio   *Founder, Digital Signal Processing Engineer*   Boston, MA   2019 – Present
· Designed, developed, and released acclaimed suite of cross–platform music production plugins in C++.
· Implemented, tuned, and optimized DSP algorithms incl. virtual analog and phase distortion synthesis.
· Worked with professional musicians to fine–tune user experience and sonic palette.
· Fostered cohesive visual language using custom–rendered 3D GUI components and design.
· Authored educational and academic material for both technical and lay audiences.
· Taught as a guest lecturer on music technology at SUNY Purchase College.

Future Audio Workshop   *Software/Graphic Design Contractor*   Boston, MA   2024
· Designed and built reactive visualizers for audio synthesis plugin in C++/GLSL.
· Implemented UI/UX design for JUCE plugin, including custom components.

Harebrained Schemes   *Senior Software Engineer*   Seattle, WA   2020 – 2023
· Led development for studio's first console video game release.
· Planned, implemented console support for Unity game: platform integration, certification, and release.
· Architected and authored multiple internal libraries in C# and Python, including frameworks for asynchronous programming, static code analysis, offline Unity asset manipulation, and app lifecycle.
· Created automated error reporting system leading to significant reduction in bugs.
· Wrote extensive documentation on console development and requirements.

Bose Corporation   *Software/Firmware Contractor*   Framingham, MA   2018 – 2019
· Created and maintained extensible software library for interfacing with audio hardware platform.
· Developed and implemented realtime sound spatialization algorithm.
· Assisted with embedded firmware development and testing.
· Designed product demos, use cases, and diagnostic tools.

Zapdot, Inc.   *Software Contractor*   Cambridge, MA   2018 – 2019
· Developed novel object placement and manipulation algorithm for touch interfaces.
· Built custom physics simulation including stability prediction and movement assistance.
· Developed comprehensive product testing regimen, automated testing platform, and QA tools.

Planetary Resources   *Embedded Systems Intern*   Seattle, WA   2016
· Created ground control software for asteroid prospecting satellite, with emphasis on accident–prevention, reliability, and usability.
· Designed and implemented development, testing, and debugging toolset for aerospace platform.
· Developed and executed extensive manual and automatic testing routines.
· Designed, fabricated, and deployed a distributed IoT sensor node platform for agriculture applications.

Publications

C. V. Pines, **"Real–Time Virtual Analog Modelling of Diode–Based VCAs,"** in *Proceedings of the 28th International Conference on Digital Audio Effects (DAFx25)*, Ancona, Italy, Sept. 2-5, 2025.

Education

Northeastern University   *Undergraduate Degrees*   Boston, MA
BS Mathematics · BFA Media Arts · Game Design Minor · GPA: 3.92 (Summa Cum Laude) · CS Capstone University Scholars Program · Honors Program · Meserve Award for Creative Excellence · Prototype Grant Recipient · Indie Game Showcase Award · American Institute of Aeronautics and Astronautics

École Polytechnique Fédérale de Lausanne   *Continuing Education*   Lausanne, Switzerland
Completed 10–week graduate–level Digital Signal Processing course (with distinction)