

Sebastian Bond

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Education

BE in Computer Engineering at Vanderbilt University

Experience

- Optimization and improving maintainability of code
- Analysis of low-energy processors
- Real-time and embedded systems
- Operating systems
- Compiler development
- Native iOS and Android app development
- Efficient game engine and entity systems development
- Creating projects to help others and improve technology
- Logic, linear algebra, graph theory, and accessible communication of mathematically precise definitions
- Linguistics

Roles

- Leadership at *Vanderbilt Free and Open Source Society* 2018 – present
 - President and project lead 2021 – present
 - Vice President and project lead 2020 – 2021
 - Mentor for Linux and tech support (partition and OS recovery) 2018 – present
- iOS and Android app developer (Swift, Objective-C, Java, and Kotlin) 2021
 - Extensive experience with Xcode, Android Studio, build systems, and the command line 2016 – present

Projects

- Senior design project: VADL (Vanderbilt Aerospace Design Laboratory) github.com/sbond75 2021 – present
 - Using computer vision to identify rocket position in an aerial image after descent
- Created a 2D game engine using C++, OpenGL, SDL, and GLEW 2016
- Drag Racer* iOS app (Swift and Objective-C) 2019 – present
 - Used Google Protobuf, SQLite database management, and code generation
- Automated video games and web browsers 2014 – 21
 - Used AutoHotkey, Selenium, and Puppeteer
- Research on compiler development at Vanderbilt University 2020 – 21
- Embedded Systems class: Distributed Autonomous Path Learning 2020
 - Self-driving robot car that learns a path and how to navigate it, then sends it to a server for other cars to follow without relearning the path
- Added a package (*Cakelisp*) to *Nix* package manager (nixos.org) 2020
- Reverse engineered NTFS and HFS+ filesystems & analyzed hex dumps 2020 – 21

Websites

- Sysadmin experience: designed, implemented, and hosted Apache servers myself
 - Tech tutorials and novel discoveries bondtechsolutions.sytes.net
 - Android app for sending batch emails emailblaster.sytes.net
 - Built a server using server-grade hardware and compiled the Linux kernel from source

Programming Languages

Fluent

- C++
- C
- Java
- AVR microcontroller assembly
- Swift
- Objective-C
- Python
- C#
- JavaScript
- Bash/Unix shell scripting
- GameMaker Language (GML)

Used occasionally in order of experience

- AutoHotkey
- HTML and CSS
- Makefiles
- Haskell
- Lua
- Rust
- Regex
- Emacs LISP
- Racket (LISP)
- x86 assembly
- GLSL (OpenGL Shader Language)
- Prolog
- Kotlin

- ActionScript
- AngelScript
- QBASIC
- JustBASIC
- Windows batch files
- Ruby
- PHP
- Autolt