

Matias Wang Silva

Curriculum Vitae

Personal details

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Education

- 2022 - 2023 **Master of Engineering**, *Girton College, University of Cambridge*
Specialized in Electrical and Electronic Engineering
Tuition fully funded by Raspberry Pi bursary
Awards: Beatrice Mills Prize, Charlotte Rycroft Travel Award, Mary Ann Leighton Scholarship
- 2019 - 2022 **Bachelor of Arts in Engineering**, *Girton College, University of Cambridge*
Conferred title of 'Scholar' and formally admitted to the College's Foundation – top 3% of year
Awards: Phyllis Tillyard Prize, Jane Catherine Gamble Prize, Mary Ann Leighton Scholarship, Outstanding Student Contribution to Education Award ([view](#), [view](#))
- 2017 - 2019 **International Baccalaureate**, *Carlucci American International School of Lisbon*
Grade: 45 out of 45 points
Graduated Top Scholar

Employment

- Nov 2023 - present **Design Engineer**, *Raspberry Pi*, Cambridge, UK
ASIC design

Work Experience

- 2022, 4 mo **Summer Intern**, *Raspberry Pi*, Cambridge, UK
- Skills: ASIC design, silicon fabrication, embedded software in C, RTL simulation and verification, Verilog, ARM AMBA protocols, ARMv8-M architecture, ARM TrustZone
- Contributions: system-level and block-level verification for upcoming Raspberry Pi silicon, ARM TrustZone verification, writing Verilog memory device implementations
- 2021, 3 mo **Summer Intern**, *Raspberry Pi*, Cambridge, UK
- Skills: Writing embedded software for the RP2040 chip, circuit prototyping, Python scripting for various embedded applications, working with an AsciiDoc toolchain for technical documentation
- Contributions: extensible Python tools for automated C header and struct generation from register data, writing demo/example software to support the public Pico C SDK, testing this on hardware
- 2020, 3 mo **Summer Intern**, *PragmatIC*, Cambridge, UK
- Skills: Mbed OS development, FreeRTOS, applications engineering, Electron GUIs, ESP32 microcontroller firmware programming, technical documentation writing
- Contributions: developed a bespoke interface for setting hardware registers via a graphical interface on a Cortex-M processor on-the-fly for application demos, sending decode algorithm changes and RFID tag reads over this serial connection

Skills

Languages

Native English, Portuguese
Professional French, Spanish
Working Mandarin

CEFR C1
HSK 4

Technical

- Hardware RISC-V assembly, ARM assembly, Verilog, processor architecture, wireless communication protocols, data protocols
- Software Python, JavaScript, C, Make, CMake
- Operating systems Linux for embedded development and server system administration, Ansible

Projects

- RISC-V processor
- designed a RISC-V processor compliant with the RV32I instruction set
 - Verilog code synthesized and simulated using an open source toolchain
 - Run on FPGA
 - [Project link](#)
- Girton College Spring Ball
- IT & Ticketing lead for my college's ball at university for two years in a row
 - Managed the website: DNS, static site generation with Hugo, web hosting
 - Wrote a Django-based ticketing platform capable of handling thousands of concurrent requests, QR code-based ticket generation and decentralized ticket scanning
 - Integrated Cambridge's Raven authentication system and features such as automated name changes, bank reference generation, user lookup
 - Developed familiarity with backend architecture, including remote PostgreSQL databases and WSGI app deployment on Heroku
- Student-Run Computing Facility
- Created and maintained a video conferencing platform for my university used by hundreds of staff and students in response to new needs brought by the pandemic
 - Given award for my work by the Cambridge University Center for Teaching and Learning signed by the Senior-Pro-Vice Chancellor for Education
 - Built custom Ansible playbooks for consistent and on-demand deployment of Big-BlueButton servers, used Xen for management of virtual machines and wrote scripts to merge recording files on an external NetApp
- CU Gastronomy Society
- [View website](#)
 - Started a university society dedicated to reviewing restaurants
 - Built the website from scratch and manage content publishing
 - Write reviews for restaurant visits and coordinate the society's activities

Interests

- Analog photography
- [Online portfolio](#)
 - Capturing street, landscapes, and portraits on film with manual 70s, 80s cameras
 - Home b/w, color development and processing in self-made darkroom
- Pi memorization
- National Pi memorization record holder for Portugal to 601 digits