

# 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 and chip design, silicon technologies, embedded software in C, RTL simulation and verification, hardware design in Verilog, ARM AMBA protocols, ARMv8-M assembly, ARM TrustZone
  - Contributions: system-level and block-level testing for upcoming Raspberry Pi silicon, ARM TrustZone verification, writing and enhancing 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, configuring decode algorithm variables and polling for RFID tag reads via a 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

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## Projects

RISC-V processor	<ul style="list-style-type: none"><li>- designed a RISC-V processor compliant with the RV32I instruction set</li><li>- Verilog code synthesized and simulated using an open source toolchain</li><li>- Run on FPGA</li><li>- <a href="#">Project link</a></li></ul>
Girton College Spring Ball	<ul style="list-style-type: none"><li>- IT &amp; Ticketing lead for my college's ball at university for two years in a row</li><li>- Managed the website: DNS, static site generation with Hugo, web hosting</li><li>- Wrote a Django-based ticketing platform capable of handling thousands of concurrent requests, QR code-based ticket generation and decentralized ticket scanning</li><li>- Integrated Cambridge's Raven authentication system and features such as automated name changes, bank reference generation, user lookup</li><li>- Developed familiarity with backend architecture, including remote PostgreSQL databases and WSGI app deployment on Heroku</li></ul>
Student-Run Computing Facility	<ul style="list-style-type: none"><li>- 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</li><li>- Given award for my work by the Cambridge University Center for Teaching and Learning signed by the Senior-Pro-Vice Chancellor for Education</li><li>- 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</li></ul>
CU Gastronomy Society	<ul style="list-style-type: none"><li>- <a href="#">View website</a></li><li>- Started a university society dedicated to reviewing restaurants</li><li>- Built the website from scratch and manage content publishing</li><li>- Write reviews for restaurant visits and coordinate the society's activities</li></ul>

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## Interests

Analog photography	<ul style="list-style-type: none"><li>- <a href="#">Online portfolio</a></li><li>- Capturing street, landscapes, and portraits on film with manual 70s, 80s cameras</li><li>- Home b/w, color development and processing in self-made darkroom</li></ul>
Pi memorization	National Pi memorization record holder for Portugal to 601 digits