Pedro Caldas Tammela

https://www.pedrotammela.com

Email : pctammela@gmail.com

Mobile : +55-21-99866-5009

EDUCATION

Pontifícia Universidade Católica do Rio de Janeiro — Rio de Janeiro, Brazil
Bachelor of Computer Science — *Jan. 2015 – Dec. 2019*

- **Bachelor's Thesis**: Scripting Linux system calls with Lua.
- **Awarded**: 90% Scholarship for 3 years.
- **Course Emphasis**: Programming languages theory and Distributed systems

Pontifícia Universidade Católica do Rio de Janeiro — Rio de Janeiro, Brazil
Minor in Entrepreneurship — *Jul. 2017 – Dec. 2019*

EXPERIENCE

CUJO AI — Rio de Janeiro, Brazil
Contractor — *Jan. 2017 - Present*

- **Cross architecture development**: ARM, x86 and MIPS architectures.
- **Lunatik**: A porting project of the Lua scripting language to the Linux kernel.
- **NFLua**: A packet scripting engine based on Lunatik and Netfilter.
- **Meta-data parsing**: Protocols parser written in Lua for software interrupt processing.
- **Packet meta-data analysis**: Layer 3/4 meta-data analysis and real time data collection.
- **Layer 3 quarantine**: A layer 3 packet quarantine using skb references.
- **Packet reputation**: Real time packet reputation analysis with distributed communication and kernel/user-space synchronization.
- **Proof of Concepts**: Written numerous proof of concepts in Lua and C for upcoming features, researching the feasibility of the feature in an embedded platform with limited resources.

CERTIFICATIONS

Google Summer of Code — Rio de Janeiro, Brazil
Associate Mentor for LabLua — *May 2018 - Aug. 2018*

- **Rcu for Lunatik**: A Lua binding for the kernel Rcu API. Developed by Caio Messias.
- **Socket for Lunatik**: A Lua binding for the kernel Socket API. Developed by Chengzhi Tan.

PROJECTS

- **Lua in Kernel**: Continuous development and support for kernel ports of the Lua scripting language.
- **Lunatik**: A port of the Lua language for the x86 Linux kernel. Originally developed by CUJO AI.
- **PoC Driver**: A driver that provides a pseudo device to run Lua scripts inside the kernel. Written for proof of concepts.
- **Blog**: Where I write about interesting stuff.

SKILLS

- **OS**: Linux, macOS, BSDs
- **Tools**: git, Makefiles
- **Languages**: C, Lua, Haskell, Java, Shell Scripting
- **Kernel**: Device drivers, Networking
- **Computer Networking**: TCP/IP, UDP, QUIC, TLS, Bluetooth
- **Network Security**: Netfilter suite, SSL communication

- **Packet Processing**: Netfilter, XDP, eBPF

- **Know-how**: Kernel internals, asynchronous communication, memory allocators, VFS layer, multi-threaded programming

- **Areas**: Internet of Things, Embedded Software, Distributed Systems, Research