

# Juan Altmayer Pizzorno

Research Engineer | Programming Languages | Software Engineering | Developer Tools | Messaging Infrastructure

[jaltmayerpizzorno.github.io](https://jaltmayerpizzorno.github.io) | [GitHub](#) | [LinkedIn](#) | [Google Scholar](#)

Computer scientist and research engineer specializing in programming languages, software engineering, and developer tools. Combines research and hands-on systems building, including practical systems for Python type inference, automated test generation, low-overhead code coverage, and profiling. Also brings deep experience in high-performance messaging infrastructure and Internet protocols, along with prior leadership as a co-founder, CTO, and SVP of R&D.

## Experience

### University of Massachusetts Amherst — Research / Teaching Assistant

2020–2026

Amherst, MA

- Developed *RightTyper*, a system for Python type inference and annotation; *CoverUp*, a coverage-guided test generation system; and *SlipCover*, a near-zero-overhead Python coverage tool (1.4M+ PyPI downloads).
- Contributed to research on Python performance analysis, including work on *Scalene*, an OSDI 2023 Jay Lepreau Best Paper Award winner.
- TA for Graduate Software Systems (CMPSCI 630, Emery Berger) and Secure Distributed Systems (COMPSCI 461/661, G. Andrew Stone); collaborated on research spanning programming languages, testing, profiling, and developer productivity.

### SparkPost — SVP Research & Development

2015–2019

Columbia, MD

- Joined the executive team after SparkPost's acquisition of Port25 and continued to provide technical and product leadership for the Port25 business unit.
- Helped bridge research, product, and engineering priorities across a platform delivering over 25% of the world's non-spam email.

### Port25 Solutions — Co-Founder and CTO

1999–2015

Columbia, MD

- Co-created a global leader in email technology and helped grow a self-funded startup into a successful infrastructure software business.
- Built the company's flagship product, *PowerMTA* (4,000+ installations in 51+ countries, used by 75% of ESPs), and led product architecture, coding standards, infrastructure, hiring, mentoring, and customer-facing technical strategy.
- Built an engineering culture centered on Agile practices, reliability, and measurable quality goals.
- Contributed to IETF standardization of DKIM (RFC 6376), now a universal email authentication standard.
- Concurrently led Port25 GmbH (Bonn, 1999–2004), a German sister company providing development and technical services.

## Earlier Experience

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**Independent Developer** — Bonn, Germany **1994–1999**

Developed *LSMTP*, a very high-performance email server distributed by L-Soft International and used by organizations including Intel, Netscape, and AOL.

**Deutsche Telekom Consulting** — “Experte IT” (IT Expert) — Bonn, Germany **1997–1998**

Developed and operated a web- and email-based knowledge base system in support of the company’s internet security consulting group.

**Forschungszentrum Informationstechnik GmbH** — Programmer / Contractor / Visiting Scientist **1991–1996**

— Bonn, Germany

Worked on X.400 email gateways, DFN academic network infrastructure, protocol conformance, documentation, and email systems performance; published research achieving roughly a 10× throughput improvement in email systems.

**Federal University of Rio de Janeiro (UFRJ)** — Programmer / Systems Programmer — Rio de Janeiro, Brazil **1988–1991**

Janeiro, Brazil

Developed OSI and messaging software, co-managed network infrastructure and VM/SP systems, taught internal courses, and represented UFRJ at Brazilian research network meetings.

## Education

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**University of Massachusetts Amherst** — PhD in Computer Science **2026**

Amherst, MA

Thesis: *Efficient and Effective Test Generation and Type Inference for Python Applications*. Advisor: Prof. Emery D. Berger.

**University of Bonn** — Diplom-Informatiker (M.Sc. equivalent) in Computer Science **2009**

Bonn, Germany

Thesis: *Protocol Intrusion Detection for the Internet Domain Name System*. Advisors: Dr. Bernd Eßer and Prof. Dr. Peter Martini. Minor in Photogrammetry.

**Cornell University** — Visiting Graduate Student in Computer Science **2008**

Ithaca, NY

Studied algorithms for credit at the University of Bonn.

## Selected Publications

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- Juan Altmayer Pizzorno and Emery D. Berger. *Getting Python Types Right with RightTyper*. Submitted to ASE 2026; arXiv:2507.16051.
- Juan Altmayer Pizzorno and Emery D. Berger. *CoverUp: Effective High Coverage Test Generation for Python*. *Proceedings of the ACM on Software Engineering*, 2025. doi:10.1145/3729398.
- Juan Altmayer Pizzorno and Emery D. Berger. *SlipCover: Near Zero-Overhead Code Coverage for Python*. In *Proceedings of the 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2023)*. doi:10.1145/3597926.3598128.
- Emery D. Berger, Sam Stern, and Juan Altmayer Pizzorno. *Triangulating Python Performance Issues with Scalene*. In *Proceedings of the 17th USENIX Symposium on Operating Systems Design and Implementation (OSDI 2023)*. **Jay Lepreau Best Paper Award**.

- Alireza Salemi, Juan Altmayer Pizzorno, and Hamed Zamani. *A Symmetric Dual Encoding Dense Retrieval Framework for Knowledge-Intensive Visual Question Answering*. In *Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2023)*. doi:[10.1145/3539618.3591629](https://doi.org/10.1145/3539618.3591629). **Best Student Paper Award.**

## Conference Talks

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- *CoverUp: Effective High Coverage Test Generation for Python*, FSE 2025.
- *Near Zero-Overhead Python Code Coverage*, PyCon US 2024.
- *SlipCover: Near Zero-Overhead Code Coverage for Python*, ISSTA 2023.

## Service & Languages

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**Program Committee:** CppCon (the C++ conference).

**Reviewer:** Proceedings of the ACM on Software Engineering (PACMSE).

**Languages:** English, German, and Portuguese (fluent); Spanish (proficient).