

JAN-PAUL VINCENT RAMOS DÁVILA

PERSONAL DATA

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EDUCATION

2021 - 2025	Cornell University BACHELOR'S OF ARTS IN PHILOSOPHY, CONCENTRATION IN MATHEMATICAL LOGIC BACHELOR'S OF ARTS IN COMPUTER SCIENCE, CONCENTRATION IN PROGRAMMING LANGUAGES
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EXPERIENCES

06/2024	Research Assistant, NASA Langley Formal Methods <i>Mechanized proofs that model correct behaviors of a Software Defined Delay-Tolerant Network's Match-Action pipeline for NASA's Interplanetary Overlay Network framework.</i> <i>Developed a formally verified Network Calculus IR in Rocq. Wrote an interpreter for a subset of P4 to target the IR.</i>
05/22 - 05/24	Research Assistant, Carnegie Mellon University S3D <i>Core contributor on the early development of the Gradual Verification framework. Empirically evaluated the soundness of Gradual C_0, and provided formal proofs of completeness between the dynamic and static verifiers.</i> <i>Explored the application of Gradual Verification to smart contracts on the Algorand and Ethereum blockchain platforms and developed a prototype for Gradually Verified Teal.</i> <i>Advisor: Dr. Jonathan Aldrich</i>
10/21 - 05/25	Research Assistant, Cornell University, Calyx <i>Implemented Graphicionado Graph Analytics algorithm in Calyx as a case study of the language. Found/solved soundness bugs in the front-end in the Computer Architecture & Programming Abstractions group.</i> <i>Worked on a symbolic execution tool for verifying parallelism in Calyx.</i> <i>Advisor: Dr. Adrian Sampson</i>

PUBLICATIONS

2025	Jenna DiVincenzo, Ian McCormack, Hemant Gouni, Jacob Gorenburg, Jan-Paul Ramos-Dávila , Mona Zhang, Joshua Sunshine, Éric Tanter, Jonathan Aldrich. "Gradual CO: Symbolic Execution for Gradual Verification", In TOPLAS , 46(4), Article No.: 14 P.1-57 and POPL 2025
2023	Jan-Paul Ramos-Dávila . "Evaluation Soundness of a Gradual Verifier with Property Based Testing", In Cornell Undergraduate Research Journal , 2(1), P.17-27 and POPL 2023 Student Research Competition .

PRESENTATIONS

2025	"Formal Verification of a Software Defined Delay-Tolerant Network", In IEEE Workshop on Optimizing Interplanetary Communication Through Network Autonomy and CoqPL 2025 .
2024	"Gradual Verification of Smart Contracts", In PriSC 2024 and POPL 2024 Student Research Competition .
2023	"Optimization of a Gradual Verifier: Lazy evaluation of Iso-recursive <i>PR</i> edicates as <i>Equi</i> -recursive at Runtime", In MWPLS 2023 and POPL 2023 Student Research Competition .

TEACHING

TEACHING ASSISTANT

1/2025 - 5/2025	CS 4/5111 Practicum in Operating Systems Cornell University
8/2024 - 12/2024	CS 4114 Systems Programming Cornell University
1/2024 - 5/2024	CS 4/5110 Programming Languages and Logics Cornell University

ACHIEVEMENTS

2024	Travel Scholarship , Verification Mentoring Workshop at CAV
2023	Fellow , Amazon Summer Undergraduate Research Experience at CMU
2023	Third Place Winner , ACM SIGPLAN POPL SRC
2022	Travel Scholarship , PLMW at ACM SIGPLAN PLDI
2020/21	Finalist in Mathematics , Regeneron International Science and Engineering Fair

ACADEMIC SERVICE

5/2025	Video Co-Chair , ACM SIGPLAN PLDI'25
1/2025	Video Co-Chair , ACM SIGPLAN POPL'25
9/2024	Virtualization Chair , ACM SIGPLAN ICFP'24
6/2024	Virtualization Chair , ACM SIGPLAN PLDI'24
1/2024	AV Committee , ACM SIGPLAN POPL'24
9/2023	Student Volunteer , ACM SIGPLAN ICFP'23

SKILLS

ENGLISH	Native
SPANISH	Native
TOOLS	Unix, Git, Bash, Neovim, Docker, Heroku, HTML/CSS
PROGRAMMING LANGUAGES	TEX TeX, Coq, OCaml, Scala, Python, Haskell, JS/TS, Java, C/C++, Rust
PROGRAMMING LANGUAGE SCHOOLS	OPLSS'24, AFP Summer School'23