CURRICULUM VITAE

Alexios Voulimeneas

Nationality: Greek
Email: A.Voulimeneas@tudelft.nl
Twitter: @systemsgreek
Website: https://alexios-voulimeneas.github.io/
Languages: Greek (native), English (fluent), German (basic)

Research Interests

Cyber Security: software diversity, memory safety, sandboxing, compartmentalization, exploits, defenses

Operating Systems: kernel development, networking, debugging, virtualization, application monitoring, heterogeneous computing, fault tolerance, reliability, record/replay

Software Protection: anti tampering, integrity checking, reverse engineering

Appointments

Assistant Professor 2023 – Present
TU Delft
Proud member of the Cybersecurity (CYS) section in Computer Science, Department of Intelligent Systems, Faculty of Electrical Engineering, Mathematics, and Computer Science. I am also part of TU Delft's Undergraduate Curriculum Committee.

Postdoctoral Scholar 2020 – 2023
KU Leuven
I worked with Professor Stijn Volckaert in the DistriNet research group at KU Leuven's Technology Campus in Ghent, Belgium.

Graduate Research Assistant 2015 – 2020
University of California, Irvine
I worked with Professor Michael Franz in the Secure Systems Lab at the Donald Bren School of Information and Computer Sciences.

Visiting Scholar Fall 2019
KU Leuven

Software Engineering Intern Summer 2019
Apple Inc.

Research Assistant Intern Summer 2017
Oracle Labs

Hellenic Army (mandatory military service) 11/2014 – 08/2015
Research and Informatics Directorate

Undergraduate and Graduate Researcher 2011 – 2014
Mobile Multimedia Laboratory/AUEB

C and JAVA Software Engineer Intern Summer 2012
NCSR Demokritos

Education

PhD in Computer Science 2020
University of California, Irvine
Advisor: Professor Michael Franz
Thesis Topic: Building the Next Generation of Security Focused NVX Systems: Overcoming Limitations of N-Variant Execution

MSc in Computer Science 2017
University of California, Irvine

Ptychio in Informatics (4-year degree) 2012
Athens University of Economics and Business (AUEB)/Department of Informatics, Athens
Advisor: Professor George Xylomenos
Thesis Topic: Towards an Error Control Scheme for a Publish/Subscribe Network

Awards, Grants, and Distinctions

2024: ACSAC Distinguished Paper Award with Artifact
2023: CCS Top Reviewer Award
2023: ASIA CCS Best Reviewer Award
2022: Runner-up for the 2022 CNIL-Inria Award for Privacy Protection
2022: EuroSys Distinguished Reviewer Artifact Award
2016: ACM CCS Student Travel Grant
2016: IEEE S&P Student Travel Grant
2015: ICS Dean's Award, University California, Irvine
2013: Scholarship for Graduate Studies, Latsis Foundation
2013: Scholarship for Graduate Studies, Foundation for Education and European Culture
2012: Valedictorian Graduate, Athens University of Economics and Business

Publications

Moneta: Ex-Vivo GPU Driver Fuzzing by Recalling In-Vivo Execution States. J. Jung, J. Jang, Y. Jo, J. Vinck, **A. Voulimeneas**, S. Volckaert, and D. Song. *(To Appear) In Network and Distributed System Security Symposium (NDSS 2025).*

I'll Be There for You! Perpetual Availability in the A⁸ MVX. A. Rösti, S. Volckaert, M. Franz, and **A. Voulimeneas.** *In Annual Computer Security Applications Conference (ACSAC 2024).*
[83 papers accepted out of 381 submissions = 21.8%] [Distinguished Paper with Artifact Award]

The Astonishing Evolution of Probabilistic Memory Safety: From Basic Heap-Data Attack Detection towards Fully Survivable Multi-Variant Execution. A. Rösti, **A. Voulimeneas**, and M. Franz. *In IEEE Security & Privacy 2024.*

Orbital Shield: Rethinking Satellite Security in the Commercial Off-the-Shelf Era. N. Yadav, F. Vollmer, A. R. Sadeghi, G. Smaragdakis, and **A. Voulimeneas.** *In IEEE Conference on Security for Space Systems (3S) 2024.*

System Call Interposition Without Compromise. A. Jacobs, M. Gülmez, A. Andries, S. Volckaert, and **A. Voulimeneas.** *In IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2024).*
[42 papers accepted out of 203 submissions = 20%]

A run a day won't keep the hacker away: Inference attacks on endpoint privacy zones in fitness tracking social networks. K. Dhondt, V. L. Pochat, **A. Voulimeneas**, W. Joosen, and S. Volckaert. *In BlackHat Asia 2023*

A run a day won't keep the hacker away: Inference attacks on endpoint privacy zones in fitness tracking social networks. K. Dhondt, V. L. Pochat, **A. Voulimeneas**, W. Joosen, and S. Volckaert. *In ACM Conference on Computer and Communications Security (CCS 2022).* ***[218 papers accepted out of 971 submissions = 22.5%]***

You Shall Not (by)Pass! Towards Secure, and Fast PKU-based Sandboxing. A. Voulimeneas, J. Vinck, R. Mechelinck, and S. Volckaert. *In European Conference on Computer Systems (EuroSys 2022).* ***[42 papers accepted out of 162 submissions = 25.9%]***

Sharing is Caring: Secure and Efficient Shared Memory Support for MVEEs. J. Vinck, B. Abrath, B. Coppens, **A. Voulimeneas**, B. De Sutter, and S. Volckaert. *In European Conference on Computer Systems (EuroSys 2022).* ***[42 papers accepted out of 162 submissions = 25.9%]***

dMVX: Secure and Efficient Multi-Variant Execution in a Distributed Setting. A. Voulimeneas, D. Song, P. Larsen, M. Franz, and S. Volckaert. *In European Workshop on Systems Security (EuroSec 2021)*

Distributed Heterogeneous N-Variant Execution. A. Voulimeneas, D. Song, F. Parzefall, Y. Na, P. Larsen, M. Franz, and S. Volckaert. *In Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA 2020).* ***[13 papers accepted out of 45 submissions = 28.9%]***

Secure and Efficient Application Monitoring and Replication. S. Volckaert, B. Coppens, **A. Voulimeneas**, A. Homescu, P. Larsen, B. De Sutter, and M. Franz. In *USENIX Annual Technical Conference (ATC 2016).* ***[47 papers accepted out of 266 submissions = 17.6%]***

A Reliable Multicast Transport Protocol for Information-Centric Networks. C. Stais, G. Xylomenos, and **A. Voulimeneas**. *In Journal of Network and Computer Applications (JNCA 2014)*

Towards an Error Control Scheme for a Publish/Subscribe Network. C. Stais, **A. Voulimeneas**, and G. Xylomenos. *In International Conference on Communications (ICC 2013)*

Theses

Building the Next Generation of Security Focused NVX Systems: Overcoming Limitations of N-Variant Execution. A. Voulimeneas. PhD Thesis, 2020.

Towards an Error Control Scheme for a Publish/Subscribe Network. A. Voulimeneas. BSc Thesis, 2012.

Funding

HONEY-MON: Cyber Deception via N-Variant Execution ONR (2021-2024)
Co-author of a proposal at UC Irvine.
With Michael Franz (**sole PI**), Per Larsen, Stijn Volckaert, David Gens, Adrian Dabrowski.
Award Amount: +/- 1.65M $

Professional Scientific Activities

Paper Review and Artifact Evaluation

(SYSTOR) ACM International Systems and Storage Conference, Program Committee [2025]
(EuroSys) European Conference on Computer Systems, Proceedings Chair [2025]
(ACNS) International Conference on Applied Cryptography and Network Security, Program Committee [2025]
(S&P) IEEE Symposium on Security and Privacy, Program Committee [2025]
(ISC) Information Security Conference, Program Committee [2024, 2025]
(EuroSec) European Workshop on System Security, Program Committee [2024, 2025]
(USENIX Security) USENIX Security Symposium, Program Committee [2024, 2025]
(DIMVA) Conference on Detection of Intrusions and Malware & Vulnerability Assessment, Program Committee [2024]
(CCS) ACM Conference on Computer and Communications Security, Program Committee [2023, 2024]
(Middleware) ACM/USENIX/IFIP International Middleware Conference, Program Committee [2023, 2025]

(USENIX Security) USENIX Security Symposium, Artifact Evaluation Publication Chair [2023]
(EuroSys) European Conference on Computer Systems, Program Committee [2023]
(ASIACCS) ACM ASIA Conference on Computer and Communications Security, Program Committee [2023, 2024]
(ESORICS) European Symposium on Research in Computer Security, Program Committee [2022, 2023]
(PLDI) ACM SIGPLAN Conference on Programming Language Design and Implementation, Artifact Evaluation Committee [2022]
(EuroSys) European Conference on Computer Systems, Artifact Evaluation Committee [2022]
(USENIX Security) USENIX Security Symposium, Artifact Evaluation Committee [2022]
(EuroSys) European Conference on Computer Systems, External Reviewer [2021, 2022]
(ROOTS) Reversing and Offensive-oriented Trends Symposium, Program Committee [2020, 2021, 2022]
(OSDI) USENIX Symposium on Operating Systems Design and Implementation, Artifact Evaluation Committee [2020]
(S&P) IEEE Symposium on Security and Privacy, Student Program Committee [2018]

Conferences Attended (+ = I gave a presentation)

(ACSAC) Annual Computer Security Applications Conference [Attended in 2024]
(ESORICS) European Symposium on Research in Computer Security [Attended in 2023]
(EuroSys) European Conference on Computer Systems [Attended in 2022+]
(NDSS) Network and Distributed Systems Security Symposium [Attended in 2016, 2017, 2018]
(S&P) IEEE Symposium on Security and Privacy [Attended in 2016]
(CCS) ACM Conference on Computer and Communications Security [Attended in 2016]
(DIMVA) Conference on Detection of Intrusions and Malware & Vulnerability Assessment [Attended in 2020+, 2022+]
(EuroSec) European Workshop on Systems Security [Attended in 2020+]

Talks

Building Secure and Reliable Systems – A Systems Approach
Invited Talk, TU Delft, PL Group, Delft, Netherlands, November 2024

Building Secure and Reliable Systems – A Systems Approach
Invited Talk, IMDEA Software Institute, Madrid, Spain, September 2024

Tales of Memory-Error Exploits and Defenses
Invited Talk, TU Delft, Delft, Netherlands, March 2023

Tales of Memory-Error Exploits and Defenses
Invited Talk, AUEB, Athens, Greece, December 2022

You Shall Not (by)Pass! Practical, Secure, and Fast PKU-based Sandboxing
Invited Talk, Telecom SudParis/IP Paris, Online, December 2022

You Shall Not (by)Pass! Practical, Secure, and Fast PKU-based Sandboxing
Invited Talk, Intel Labs, Online, May 2022

Distributed Heterogeneous N-Variant Execution
Invited Talk, DRADS DistriNet Workshop, Leuven, Belgium, July 2021

Redundant Execution and Lightweight Monitoring for Security and Performance
Invited Talk, Mobile Multimedia Laboratory (MMlab), AUEB, Athens, Greece, June 2019

Industry and Graduate Studies Opportunities in Greece, Europe, and USA
Invited Talk, AUEB, Athens, Greece [2015, 2016, 2017, 2019, 2021, 2022]

Teaching Experience

Course Developer & Instructor 2024 – Present
Systems Security
TU Delft

Course Developer & Instructor 2024 – Present
Computer Security
TU Delft

Teaching Assistant Winter 2017
ICS 6B: Boolean Algebra and Logic
University of California, Irvine

Reader Spring 2016
ICS 46: Data Structure Implementation and Analysis
University of California, Irvine

Lab Assistant Summer 2010
Computational Mathematics
Athens University of Economics and Business

Mentoring, Training, and Advancement of Young Scientists

PhD Research and Dissertation Mentor:

ongoing:

Jesús María Gómez Moreno (2024-Present, TU Delft)

External PhD Thesis Reviewer/Evaluator

Alessandro Sanna ([expected 2025], University of Cagliari), "Under The Surface: Analysing Unconventional Malware and Unveiling its Secrets"

MSc Thesis Mentor:

ongoing:

Vissarion Moutafis (2024-Present, TU Delft)

Ali Kahawati (2024-Present, TU Delft)

completed:

Wouter Jehee (MSc 2024, TU Delft), "WALL-EYE: Taking a look at CubeSat security - Security analysis of CubeSats on a physical testbed"

MSc Thesis Committee Member:

Weiting Cai (MSc 2024, TU Delft), "1DRep:Automatic Repair for 1-day Vulnerabilities in Reused C/C++ IoT Open-source Software Components"

Daan Prinsze (MSc 2024, TU Delft), " PinDown: Generalized Application Code Identification And Functional Component Analysis In RTOS-based Firmware"

Adriaan Jacobs (MSc 2021, KU Leuven), "Combating address-sensitive behavior in MVEEs"

Michael Poker (MSc 2022, TU Braunschweig), "Techniques for Fast-Forwarding Execution State to Synchronize Software Instances in an MVEE"

Current as of January 23, 2025