

# CURRICULUM VITAE

## Alexios Voulimeneas

Nationality: Greek

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Languages: Greek (native), English (fluent), German (basic)

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## Research Interests

**Cyber Security:** software diversity, memory safety, sandboxing, compartmentalization, n-variant execution, 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

## 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

## Research Experience

**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.

**Postdoctoral Scholar** 2020 – 2023

KU Leuven

I worked with Professor Stijn Volckaert in the imec-DistriNet research group at KU Leuven's Technology Campus in Ghent, Belgium. I conduct research, write papers and project proposals, and supervise and evaluate students.

**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. I conducted research, and I wrote papers and project proposals.

**Visiting Scholar** Fall 2019

KU Leuven

## Industry Experience

<b>Software Engineering Intern</b> Apple Inc.	Summer 2019
<b>Research Assistant Intern</b> Oracle Labs	Summer 2017
<b>Hellenic Army</b> (mandatory military service) Research and Informatics Directorate	11/2014 – 08/2015
<b>C and JAVA Software Engineer Intern</b> NCSR Demokritos	Summer 2012

## Publications

### Conference/Journal/Workshop Publications

**A run a day won't keep the hacker away: Inference attacks on endpoint privacy zones in fitness tracking social networks (under embargo until the first day of the conference).** K. Dhondt, V. L. Pochat, A. Voulimeneas, W. Joosen, and S. Volckaert. *In ACM Conference on Computer and Communications Security (To appear 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 (under embargo until the first day of the conference).** 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 \$

## Teaching Experience

### 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

## Supervision and Evaluation

### PhD Students

Karel Dhondt (2018-2023, @ KU Leuven)

Jonas Vinck (2019-2023, @ KU Leuven)

Ruben Mechelinck (2019-2023, @ KU Leuven)

Adriaan Jacobs (2021-2023, @ KU Leuven)

Alicia Andries (2022-2023, @ KU Leuven)

André Rösti (2022-2023, @ UCI)

### MSc Students

André Rösti (Research Assistant since 2020, @ UCI. Graduated 2022)

Adriaan Jacobs (Master Thesis since 2020, @ KU Leuven. Graduated 2021)

**Thesis Topic:** Combating address-sensitive behavior in MVEEs

Michael Poker (Master Thesis since 2021, @ TU Braunschweig. Graduated 2022)

**Thesis Topic:** Techniques for Fast-Forwarding Execution State to Synchronize Software Instances in an MVEE

## Professional Scientific Activities

### Paper Review and Artifact Evaluation

(USENIX Security) USENIX Security Symposium, Program Committee [2024]

(DIMVA) Conference on Detection of Intrusions and Malware & Vulnerability Assessment, Program Committee [2024]

(CCS) ACM Conference on Computer and Communications Security, Program Committee [2023]

(Middleware) ACM/USENIX/IFIP International Middleware Conference, Program Committee [2023]

(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)**

(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**

#### **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]

## **Awards, Grants, and Distinctions**

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

