

# CURRICULUM VITAE

## Alexios Voulimeneas

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

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### Research Interest

**Cyber Security:** software diversity, memory safety, sandboxing, compartmentalization, multi-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

**Doctor of Philosophy (PhD), Computer Science** 2020

University of California, Irvine

**Advisor:** Prof. Michael Franz

**Dissertation Title:** Building the Next Generation of Security Focused NVX Systems: Overcoming Limitations of N-Variant Execution.

**M.S, Computer Science** 2017

University of California, Irvine

**Degree in Informatics** • 4-year curriculum 2012

Athens University of Economics and Business (AUEB)/Department of Informatics, Athens

**Advisor:** Prof. George Xylomeneos

**Dissertation Title:** Towards an Error Control Scheme for a Publish/Subscribe Network

### Research Experience

**Postdoctoral Scholar** 2020 – Present

KU Leuven

I work with Prof. 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 Prof. Michael Franz in the Secure Systems Lab at the Donald Bren School of Information & Computer Sciences. I conducted research, and I wrote papers and project proposals.

**Visitor Scholar** Fall 2019

KU Leuven

**Undergraduate and Graduate Researcher** 2011 – 2014

Mobile Multimedia Laboratory/AUEB

## 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 & Informatics Directorate	11/2014 – 08/2015
<b>C &amp; JAVA Software Engineer Intern</b> NCSR Demokritos	Summer 2012

## Publications

### Conference/Journal/Workshop Publications

**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

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

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

## Funding

HONEY-MON: Cyber Deception via N-Variant Execution  
Co-author of a proposal at UC Irvine.

ONR (2021-2024)

With Michael Franz, Per Larsen, Stijn Volckaert, David Gens, Adrian Dabrowski.  
Award Amount: +/- 1M \$ (with a possible option to +/- 1.65M \$)

## Teaching Experience

### Teaching Assistant

ICS 6B: Boolean Algebra & Logic  
University of California, Irvine

Winter 2017

### Reader

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

Spring 2016

### Lab Assistant

Computational Mathematics  
Athens University of Economics and Business

Summer 2010

## Supervision and Evaluation

### PhD Students

Karel Dhondt (since 2018, @ KU Leuven)  
Jonas Vinck (since 2019, @ KU Leuven)  
Ruben Mechelinck (since 2019, @ KU Leuven)  
Adriaan Jacobs (since 2021, @ KU Leuven)  
Alicia Andries (since 2022, @ KU Leuven)  
André Rösti (since 2022, @ 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)

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

## Professional Scientific Activities

### Paper Review and Artifact Evaluation

(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]

(USENIX OSDI) USENIX Symposium on Operating Systems Design and Implementation, Artifact Evaluation Committee [2020]

(IEEE 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+]  
(EuroSec) European Workshop on Systems Security [Attended in 2020+]

## **Presentations**

Alexios Voulimeneas. "Distributed Heterogeneous N-Variant Execution." DRADS @ KU Leuven, Leuven, Belgium, July 2021.

Alexios Voulimeneas. "Redundant execution and Lightweight Monitoring for Security and Performance." Invited talk @ Mobile Multimedia Laboratory (MMLab), AUEB, Athens, Greece, June 2019.

Alexios Voulimeneas. "Industry and Graduate Studies Opportunities in Greece, Europe, and USA." Invited talk @ AUEB, Athens, Greece [2015, 2016, 2017, 2019, 2021].

## **Distinctions**

EuroSys Distinguished Reviewer Artifact Award	2022
ACM CCS student travel award	2016
IEEE S&P student travel award	2016
ICS Dean's Recruitment Inceptive • University California, Irvine	2015
Scholarship for graduate studies • Latsis Foundation	2013
Scholarship for graduate studies • Foundation for Education and European Culture	2013
Valedictorian Graduate of September 2012 • Athens University of Economics and Business	2012