

ORESTIS MELKONIAN

PERSONAL DATA

PLACE | DATE OF BIRTH: Athens | 3 December 1992
EMAIL: melkon.or@gmail.com
WEBSITE: omelkonian.github.io

EDUCATION

SEP 2019 - NOW PhD in COMPUTER SCIENCE
University of Edinburgh, Scotland
Institute: Laboratory for Foundations of Computer Science (LFCS)
Supervisor: Philip Wadler
Topic: Formalizing Blockchain Semantics in Agda

SEP 2017 - JUL 2019 M.Sc. in COMPUTING SCIENCE
Utrecht University, The Netherlands
GPA: 8.99/10 (*cum laude*)
Specialization: Programming Technology
Supervisors: Wouter Swierstra (UU), Manuel M.T. Chakravarty (IOHK)
Thesis: Formalizing Extended UTxO and BitML Calculus in Agda

OCT 2010 - APR 2016 B.Sc. in COMPUTER SCIENCE
National and Kapodistrian University of Athens, Greece
GPA: 8.6/10 (*distinction*)
Specializations: Knowledge and Data Management, Software
Supervisors: Panos Rondogiannis, Angelos Charalambidis
Thesis: RHEA - A Reactive, Heterogeneous, Extensible and Abstract Framework for Dataflow Programming

FEB 2014 - Jul 2014 Erasmus exchange student in COMPUTER SCIENCE
Universita della Svizzera Italiana, Lugano, Switzerland
Coordinators: Ioannis Emiris, Marc Langheinrich

WORK EXPERIENCE

JAN 2019 - JUL 2019 Haskell Developer (part-time)
QBayLogic, Enschede, The Netherlands
Implemented a GUI to inspect optimization steps in the Clash compiler
Supervisor: Christiaan Baaij

DEC 2017 - DEC 2018 Haskell Developer (part-time)
Utrecht University, The Netherlands
FORMALZ: A tower-defence game for learning Hoare-style specifications
Developed the SMT-based checker between teacher and student formulas
Supervisor: Wishnu Prasetya

JUN 2017 - AUG 2017 Research Intern
Max Planck Institute for Software Systems (MPI-SWS)
Kaiserslautern, Germany
Software Analysis & Verification Group
Proof mechanization of a novel C/C++11 memory model in Coq
Supervisor: Viktor Vafeiadis

MAY 2016 - MAY 2017 Technical Intern (*Backend Web Developer*)
CERN, Geneva, Switzerland
INVENIO project: Video workflows for the Cern Document Server (CDS)
Supervisor: Ludmila Marian

OCT 2015 - APR 2016 Research Intern
National Center for Scientific Research "Demokritos", Athens, Greece
Software & Knowledge Engineering Laboratory (SKEL)
Design and implementation of a dataflow framework for robotics
Supervisor: Angelos Charalambidis

RESEARCH INTERESTS

- Functional Programming
- Programming Languages, Semantics
- Type Systems, Formal Semantics
- Verification, Formal Methods
- Compilers, Static Analysis
- Category Theory
- Proof Theory, Theorem Provers
- Algorithmic Music

PUBLICATIONS

- ISOLA '20 **UTXO_{ma}: UTXO with Multi-Asset Support**
M.Chakravarty, J.Chapman, K.MacKenzie, O.Melkonian, J.Müller, M.Jones, P.Vinogradova, P.Wadler
9th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation
- ISOLA '20 **Native Custom Tokens in the Extended UTXO Model**
M.Chakravarty, J.Chapman, K.MacKenzie, O.Melkonian, J.Müller, M.Jones, P.Vinogradova, P.Wadler
9th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation
- WTSC'20 **The Extended UTXO Model**
(FC) M.Chakravarty, J.Chapman, K.MacKenzie, O.Melkonian, M.Jones, P.Wadler
Proceedings of the 4th Workshop on Trusted Smart Contracts
- SRC'19 **Formalizing BitML Calculus in Agda**
(ICFP) Orestis Melkonian
Student Research Competition, Poster Session
- TyDE'19 **Formal Investigation of the Extended UTxO Model**
(ICFP) Orestis Melkonian, Wouter Swierstra, Manuel M.T. Chakravarty
Proceedings of the 4rd ACM SIGPLAN International Workshop on Type-Driven Development. ACM
- FARM'19 **Music as Language: Putting Probabilistic Temporal Graph Grammars to Good Use**
(ICFP) Orestis Melkonian
Proceedings of the 7th ACM SIGPLAN International Workshop on Functional Art, Music, Modeling, and Design. ACM
- FARM'19 **What Constitutes a Musical Pattern?**
(ICFP) Orestis Melkonian, Iris Yuping Ren, Wouter Swierstra, Anja Volk
Proceedings of the 7th ACM SIGPLAN International Workshop on Functional Art, Music, Modeling, and Design. ACM
- ICSE'19 **Having Fun in Learning Formal Specifications**
Wishnu Prasetya, Craig Leek, Melkonian Orestis *et al.*
Proceedings of the 41th International Conference on Software Engineering: Software Engineering Education and Training. ACM
- REBLS'18 **RHEA: A Reactive, Heterogeneous, Extensible and**
(SPLASH) **Abstract Framework for Dataflow Programming**
Melkonian Orestis, Charalambidis Angelos
Proceedings of the 5th ACM SIGPLAN International Workshop on Reactive and Event-Based Languages and Systems. ACM
- ESSLLI'18 **D³ as a 2-MCFL**
Kogkalidis Konstantinos, Melkonian Orestis
Student Session Proceedings of the 30th European Summer School in Logic, Language and Information. Springer

TEACHING EXPERIENCE

- SEP 2020 - DEC 2020 **Introduction to Computation: Functional Programming**
Teaching Assistant & Tutor & Marker
University of Edinburgh, School of Informatics
- SEP 2019 - DEC 2019 **Types and Semantics for Programming Languages**
Teaching Assistant
University of Edinburgh, School of Informatics
- SEP 2019 - DEC 2019 **Introduction to Computation: Functional Programming**
Tutor & Marker
University of Edinburgh, School of Informatics

AWARDS

- JUN 2019 Travel Grant
ZuriHac: A 3-day Haskell Hackathon, Zurich, Switzerland
- APR 2019 Travel Grant
School and Workshop on Univalent Mathematics, Birmingham, UK
- AUG 2018 Registration Grant
European Summer School on Logic, Language & Information (ESSLI), Sofia, Bulgaria
- JUL 2018 Travel Grant
DeepSpec Summer School, Princeton, US
- JUL 2017 Travel Grant
CAV Conference, Heidelberg, Germany
- JAN 2016 Student Travel Grant
Programming Language Mentoring Workshop (PLMW), POPL Conference, Florida, US
- MAR 2016 Student Travel Grant
Meddays '16, Sophia-Antipolis, France

LANGUAGES

- GREEK: Native speaker
- ENGLISH: **Fluent**, *Certificate of Proficiency, University of Michigan*
- GERMAN: **Intermediate**, *Zertifikat B1, Goethe Institute*
- FRENCH: **Beginner**, *A2.1, Supercomm Suisse SA*

EXTRA-CURRICULAR ACTIVITIES

- Musical Instrument:** Electric jazz guitar (Intermediate)
RGT Grade 6 (*distinction*)
UWLQ Level 3 Certificate in Music Performance
University of West London
Examiner: Adam Moore BA(Hons), MMus, PGCE, FLCM

(Algorithmic) Music Composition, Films, Philosophy, Literature, Traveling

REFERENCES

- | | | | |
|---|--|--|---|
| Wouter Swierstra
Utrecht University
✉ w.s.swierstra@uu.nl | Viktor Vafeiadis
MPI-SWS
✉ viktor@mpi-sws.org | Manuel M.T. Chakravarty
IOHK
✉ manuel.chakravarty@iohk.io | Alejandro Serrano Mena
Utrecht University
✉ a.serranomena@uu.nl |
|---|--|--|---|