

ORESTIS MELKONIAN

PERSONAL DATA

PLACE | DATE OF BIRTH: Athens | 3 December 1992
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EDUCATION

SEPT 2017 - JUL 2019 M.Sc. in COMPUTING SCIENCE
Utrecht University, The Netherlands
Current GPA: 8.95/10
Specialization: Programming Technology
Supervisors: Wouter Swierstra (UU), Manuel Chakravarty (IOHK)
Thesis: Formal Investigation of the Extended UTxO Model in Agda

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

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
Implementing 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: Image auto-tagging 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

- ICSE'19 **Having Fun in Learning Formal Specifications** [\[paper\]](#)
Wishnu Prasetya, Craig Leek, Melkonian Orestis *et al.*
Proceedings of the 41th International Conference on Software Engineering: Software Engineering Education and Training. ACM, 2019
- REBLS @ SPLASH'18 **RHEA: A Reactive, Heterogeneous, Extensible and Abstract Framework for Dataflow Programming** [\[paper\]](#)
Melkonian Orestis, Charalambidis Angelos
Proceedings of the 5th ACM SIGPLAN International Workshop on Reactive and Event-Based Languages and Systems. ACM, 2018
- ESSLI'18 **D³ as a 2-MCFL** [\[paper\]](#)
Kogkalidis Konstantinos, Melkonian Orestis
Student Session Proceedings of the 30th European Summer School in Logic, Language and Information. Springer, 2018

AWARDS

- JUNE 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
- JAN 2016 Student Travel Grant
Programming Language Mentoring Workshop (PLMW)
POPL conference, Florida, US
- MAR 2016 Student Travel Grant
Meddays '16, Sophia-Antipolis, France

TALKS

- NOV 2018 **RHEA: A Framework for Dataflow Programming**
REBLS@SPLASH '18, Boston, USA
- AUG 2018 **D³ as a 2-MCFL**
ESSLI '18, Sofia, Bulgaria
- DEC 2015 **A Streamful of Robots**
NCSR "Demokritos", Athens, Greece
- DEC 2015 **A Dataflow Approach to Robot Programming**
13th PL Seminar IEEE, Softlab, Athens, Greece

ACADEMIC PROJECTS

COMPILERS	Adding impredicative types to the Glasgow Haskell Compiler (GHC) <i>Technologies:</i> Haskell, GHC, Type Checker
COMPUTER MUSIC	AlgoRhythm A Haskell library for algorithmic music composition <i>Technologies:</i> Haskell, Euterpea, Formal Grammars, Chaos Theory
META PROGRAMMING	MWS Framework for generating full-stack CRUD web apps <i>Technologies:</i> Scala, scala.meta, Play, Coffeescript, AngularJS
EMBEDDED DSL	Racketlog Prolog implementation embedded in Racket <i>Technologies:</i> Racket, Dr.Racket, Macros
COMPILERS	MiniJava A complete compiler for a pure subset of Java <i>Technologies:</i> Java, JavaCUP, JavaJTB, Visitor Pattern, IRIS Datalog
PROGRAMMING LANGUAGES	LCI An interpreter for the λ -Calculus <i>Technologies:</i> C++, Recursive Descent Parsing
WEB SOFTWARE DEVELOPMENT	Impero! A massive-multiplayer online turn-based strategy game <i>Contributions:</i> Random map generation, Gameplay logic, Client visualization <i>Technologies:</i> Agile Programming, SCRUM, Java, Javascript, MongoDB, REST, Create.js
LARGE SOFTWARE DEVELOPMENT	SNAP Social Network Analysis Project Previous topic for ACM-SIGMOD programming contest <i>Technologies:</i> C++, GNUplot, Large CSV Datasets
PATTERN RECOGNITION OCR	A morphological approach to text extraction from periodically repeated backgrounds <i>Technologies:</i> C++, ImagXpress7, Borland C++ Builder
PARALLEL SYSTEMS	Distributed image convolution using 3 different frameworks <i>Technologies:</i> MPI, OpenMP, CUDA
COMPUTER GRAPHICS	Interstellar A 3-D game for asteroid avoidance <i>Technologies:</i> C/C++, OpenGL, Adobe Photoshop
COMPUTATIONAL GEOMETRY	A GUI app of the sweep algorithm for line and parabolas intersection <i>Technologies:</i> Java, JFrame, Self-balancing trees

LANGUAGES

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

EXTRA-CURRICULAR ACTIVITIES

Music Instrument:	Electric jazz guitar (Intermediate) RGT Grade 6 (<i>distinction</i>) <i>UWLQ Level 3 Certificate in Music Performance(Grade 6)</i> , University of West London <i>Examiner:</i> Adam Moore BA(Hons), MMus, PGCE, FLCM
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Guitar Lessons, (Algorithmic) Music Composition, Films, Philosophy, Literature, Traveling