

# Viktor Kunčak: Short CV (Résumé)

Google Scholar ID/citations: <https://scholar.google.ch/citations?user=kmoklesAAAAJ>  
Full publications available at <http://lara.epfl.ch/~kuncak/papers/vkuncak.html>

## Education

- 2001-2007 **Massachusetts Institute of Technology, Cambridge, USA**  
Ph.D. in Computer Science (degree date February 2007), GPA 5.0/5.0  
Thesis: Modular Data Structure Verification      Advisor: Prof. Martin C. Rinard
- 2000-2001 **Massachusetts Institute of Technology, Cambridge, USA**  
M.Sc. in Computer Science, Minor in Physics, September 2001, GPA 5.0/5.0  
Thesis: Designing an Algorithm for Role Analysis      Advisor: Prof. Martin C. Rinard
- 1996-2000 **University of Novi Sad, Serbia**  
B.Sc. in Computer Science, GPA 10.0/10.0, Best Student of the University Award  
Thesis: Modular Interpreters in Haskell      Advisor: Prof. Mirjana Ivanović

## Employment History

- 2012-today **Associate Professor**, leader of Laboratory for Automated Reasoning and Analysis  
School of Computer and Communication Sciences  
EPFL (École Polytechnique Fédérale de Lausanne), Switzerland
- 2007-2012 **Tenure-Track Assistant Professor**  
School of Computer and Communication Sciences  
EPFL (École Polytechnique Fédérale de Lausanne), Switzerland

## Institutional Responsibilities

- MSc admissions committee for Computer Science (since 2016)
- Faculty recruiting committee

**Past:** EPFL Commission de recherche, February 2013-; Commission d'enseignement SIN, Fall 2012-; EPFL Human Research Ethics Committee, 10.2013-01.2014; IC Ph.D. committee (EDIC), 2009-2014; Co-organized IC Summer Research Institute (SuRI) 2011 and IC Research Day 2018

## Graduated 12 doctoral students:

1. Emmanouil Koukoutos (2019), Google LLC
2. Nicolas Charles Yves Voirol (2019), Google LLC
3. Mikaël Mayer (2017), University of Chicago; founder and CTO at Tharzen
4. Ravichandhran Kandhadai Madhavan (2017), Apple Inc.
5. Regis Blanc (2017), Google LLC
6. Etienne Kneuss (2016), CTO and partner at IMMOMIG SA
7. Tihomir Gvero (2015), Owner, Designer, Developer of Gvero's Pintokyo Games
8. Eva Darulova (2014), **tenure-track faculty** at **Max-Planck Institute** for Software Systems
9. Giuliano Losa (2014), Galois, Inc., co-supervised with Rachid Guerraoui
10. Hossein Hojjat (2013), **tenure-track faculty** at Rochester Institute of Technology
11. Philippe Suter (2012), Two Sigma
12. Ruzica Piskac (2011), Donna L. Dubinsky **Associate Professor** on Term, **Yale** University

**Current doctoral students:** Romain Edelmann, Georg S. Schmid

**Doctoral thesis committee** member for over 20 additional Ph.D. theses at EPFL and elsewhere

### Selected post-doctoral alumni:

- Swen Jacobs, **faculty member**, CISPA Helmholtz Center Inf. Security, Saarbrücken (Germany)
- Andrew J. Reynolds, **research scientist**, University of Iowa (USA)

### Approved Research Projects:

Only the first listed projects is still ongoing, with the remaining funding in 2020 solely for 8 months of salary of one PhD student (Georg Schmid).

period	amount	co-PIs	source	number
2017-2020	639'839 CHF	none	SNSF	200021_175676
2015-2018	105'000 CHF	Srdjan Škrbić M.Odersky, D.Mašulović	SNSF SCOPES	IZ74Z0_160453
2015-2016	164'465 CHF	none	SNSF	200020_159949
2012-2017	1'739'200 CHF	none	EC ERC StG	PE6-306484-IMPRO
2013-2016	205'390 CHF	none	SNSF	200021_144503
2013-2013	23'000 CHF	none	SNSF	200020_146649
2013-2013	36'340 CHF	Rachid Guerraoui	SNSF	200020_144502
2012-2012	44'850 CHF	none	SNSF	200020_138204
2011-2013	103'098 CHF	Rachid Guerraoui	SNSF	200021_132188
2010-2013	104'980 CHF	Predrag Janičić	SNSF SCOPES	IZ73Z0_127979
2010-2013	190'383 CHF	none	SNSF	200021_132176
2009-2013	400'000 CHF	many	www.cost.eu	Action IC0901
2008-2012	1'086'000 CHF	M.Odersky, T.Henzinger	Microsoft	ICES ProgLab.NET
2008-2012	147'385 CHF	none	SNSF	200021_120433

Reviewed proposals for funding agencies in Switzerland, USA, France, Israel, Netherlands

### Courses designed and taught at EPFL:

- Computer Language Processing (compilers), 3rd year, 2008-2019
- Formal Verification: master's level, 6 or 7th semester, 2007-2019
- Functional Programming, 2nd year, co-teaching with M. Odersky
- Parallelism and Concurrency, 2nd year, co-teaching with M. Odersky
- Co-produced Coursera MOOC "Parallel Programming", completed by 1000s of learners

### PC Co-Chair, Journal Editorial Boards, Scientific Event Organization

Co-chair for: **CAV 2017**, Int. Conf. Computer Aided Verification, **SYNT 2015**, Workshop on Synthesis, **FMCAD 2014**, Int. Conf. Formal Methods in Computer-Aided Design, **VMCAI 2012**, Int. Conf. Verification, Model Checking, and Abstract Interpretation

(Past) **Associate Editor** of the **ACM Transactions** on Programming Languages and Systems (TOPLAS).

Workshop initiator and co-organizer:

- Machine Learning for Programming (MLP) collocated with FLOC 2018 in Oxford
- Workshop on Synthesis, Verification, and Analysis of Rich Models (SVARM) 2010, 2011, 2012.
- Summer School on Software Synthesis, Dagstuhl, August 2011.

An initiator of an international COST Action to establish formats for verification and synthesis (Rich Model Toolkit), 20 countries, 50 research groups (<http://richmodels.epfl.ch/>).

### Awards

- 1st place in 2/3 tracks in synthesis competition, for implementation based on CAV 2015 work
- ACM Communications Research Highlight (CACM 2012)
- ACM SIGSOFT Distinguished Paper (ICSE 2010)
- Best student of University of Novi Sad (across all majors) in class graduating in 2000

## Keynotes

- **Lambda Days** Kraków, February 2020
- **Scala Days** Copenhagen, June 2017
- 7th Int. Conf. Interactive Theorem Proving (**ITP**), August 2016
- **NASA Formal Methods (NFM)**, April 2015
- 24th International Symposium on Logic-Based Program Synthesis and Transformation (**LOPSTR**), September 2014
- International Colloquium on Automata, Languages, and Programming (**ICALP**), 8-11 July 2014, Copenhagen, Denmark
- **Runtime Verification (RV)**, September 2013, France
- **Satisfiability Modulo Theories (SMT)**, with CAV, July 2011, USA
- **Intermediate Verification Languages**, with CADE, August 2011, PL
- **Interactions, Games and Protocols (iWIGP)**, with ETAPS, March 2011, DE
- 19th Annual Conference on Computer Science Logic (**CSL**), August 2010, Brno, CZ
- **Aliasing, Confinement and Ownership in Object-Oriented Programming**, July 2009
- **KeY Symposium**, May 2009, Speyer, DE

## Software

The following is a selection of open-source software developed by our lab released publically on GitHub:

- **System FR**: a calculus for dependent types with refinements formalized in Coq proof assistant, <https://github.com/epfl-lara/systemfr>
- **Scallion**: LL(1) parsing combinator library for Scala, <https://github.com/epfl-lara/scallion>
- **Stainless**: Verification Framework for Scala, <https://github.com/epfl-lara/stainless>
- **Smart**: Verification and Generation of Smart Contracts, <https://github.com/epfl-lara/smart>
- **Leon**: System for Verification, Synthesis, Repair, <https://github.com/epfl-lara/leon>
- **LeonWeb**: Web-interface for Leon, <https://github.com/epfl-lara/leon-web>
- **Inox**: Solver for Higher-Order Functional Programs, <https://github.com/epfl-lara/inox>
- **Welder**: Interactive Theorem Proving based on Inox, <https://github.com/epfl-lara/welder>
- **ScalaZ3**: DSL in Scala for Constraint Solving with Z3, <https://github.com/epfl-lara/ScalaZ3>
- **Nugget**: Neural-Network Guided Expression Transformation <https://github.com/epfl-lara/nugget>
- **Analyzing and Comparing Context-Free Grammars**, <https://github.com/epfl-lara/GrammarComparison>
- **GrammarWeb**: An online tutoring system for context-free grammars, <https://github.com/epfl-lara/grammar-web>