Pesho Ivanov

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SUMMARY

PhD student at ETH Zurich in algorithmic computational biology.
Worked at Google and prepared students for olympiads in informatics.
Interested in cooperative structures.

EDUCATION

APR 2017 — NOW	PhD student on **Reliable Computational Biology** *Prof. Martin Vechev's* Secure, Reliable, and Intelligent Systems Lab (SRI) Computer Science department ETH Zurich, Switzerland
APR 2015 — FEB 2017	Master degree in **Software Engineering** *(extra-mural)* Thesis: *Framework for Genomic Reconstruction Algorithms* Shumen University, Bulgaria
JUN 2014	Bachelor degree in **Computer Informatics** Shumen University, Bulgaria ↑ transferred because of a crazy ban from entering Russia
SEP 2009 — JUN 2013 *(interrupted by visa issues)*	Specialist degree *(equivalent to Bachelor+Master)* in **Applied Mathematics and Informatics** Moscow State University, Russia // calculus, Computer vision
SEP 2008 — JUN 2009 *(left to Moscow)*	Bachelor degree in **Computer science** // + led seminars in advanced algorithmics Sofia University, Bulgaria // mainly discrete maths
SEP 2000 — JUN 2008	Mathematics and Physics profile // award for most scientific achievements of his year Shumen High school of Sciences, Bulgaria

Additional:

SEP 2011 — JUN 2013	Master degree *(not accredited)* in **Bioinformatics** // + taught algorithms to biologists Yandex School of Data Mining, Moscow, Russia
JAN 2011	VISION AND MACHINE-LEARNING RESEARCH SCHOOL, ENS Lyon, France
JUL 2008	RUSSIAN SUMMER INFORMATICS CAMP, Kostroma, Russia // 3 weeks of problems and theory
AUG 2007	PHYSICS CAMP, Panitsite, Bulgaria // 3 weeks of maths and physics
2004 — 2007	SUMMER RESEARCH INFORMATICS CAMP, Varna, Bulgaria // 2-week problem solving
2001 — 2008	MATHEMATICS AND INFORMATICS PRIVATE SCHOOL "A&B", Shumen, Bulgaria

Internships

Jun 2016 — Mar 2017	Bioinformatics internship on Single-cell transcriptomics lymphoma patients *Prof. Martin Vechev, Software Reliability Lab, ETH Zurich* *PD Dr. Emmanuella Guenova, Dermatology Clinic, University of Zurich*
Jul 2013 — Aug 2013	Summer internship on SPAdes open source genome assembler // chimeras presentation // proof of concept: replication bugs to enhance assembly in open source assembler *Prof. Pavel Pevzner's, Algorithmic Biology Lab, St. Petersburg Academic University*
Sep 2012 — Jun 2013	Microbiological models designer // Microcin modelling *Prof. Konstantin Severinov's lab, Institute of Gene biology, Russian Academy of Sciences*
Jul 2012 — Aug 2012	Research internship on probabilistic verification of biological models // insisted on my own topic on virus-bacteria interaction [Summary] *Prof. Martin Vechev's, Software Reliability Lab, ETH Zurich*
Jul 2011 — Aug 2011	Computational Geometry Algorithms Library (CGAL) internship Google Summer of Code // implemented topological operators on tetrahedral meshes
Jul 2007 — Sep 2007	Developer of a bin-packing genetic algorithm for glass cutting optimization *Telepol Net, Bulgaria* // appreciating evolution and first algorithm in production

Publications

AStarix: Fast and Optimal Sequence-to-Graph Alignment
P. Ivanov, B. Bichsel, H. Mustafa, A. Kahles, G. Rätsch, M. Vechev
International Conference on Research in Computational Molecular Biology (RECOMB) 2020

Debin: Predicting debug information in stripped binaries
J. He, **P. Ivanov**, P. Tsankov, V. Raychev, M. Vechev
Proceedings of the 2018 ACM SIGSAC Conference on Computer and Communications Security

Ineffective antibody-dependent cellular cytotoxicity in patients with cutaneous T cell lymphoma
Y. Chang, M. Ziegler, D. Ignatova, **P Ivanov**, R. Profanter, K. Kerl, R. Dummer,
   E. Contassot, L. French, A. Cozzio, S. Misailovic, W. Hoetzenecker, M. Vechev, E. Guenova
Experimental Dermatology, 2018

Teaching

Sep 2017 — now	Teaching Assistant for the courses
	Algolab, Data structures and Algorithms, Parallel programming,
	Rigorous Software Engineering, Reliable AI,Theoretical Informatics
	Computer Science department, ETH Zurich
Sep 2015, Sep 2018	Supervisor of high school students
	Science&Arts school "Science Xplore", Viseu, Portugal
Nov 2013 — Jun 2014	Informatics competitions trainer for high school students
	Mathematics and Informatics Private School "A&B", Shumen, Bulgaria
Nov 2013 — Jan 2014	Teaching Assistant for the *Coursera* Bioinformatics course
	Prof. Pavel Pevzner, University of California, San Diego
Aug 2010	Lecturer at school students informatics camp // strongest Russian competitors
	Russian Summer Informatics Camp, Saratov
Mar 2008 — Jun 2009	Teaching Assistant for "Design and Analysis of Algorithms" course
	Faculty of mathematics and informatics, Sofia University, Bulgaria
Sep 2008 — Jun 2009	Author of the problems in Online programming tournament
	Musala Soft, Bulgaria // mainly discrete optimization problems
2008 — 2009 2013 — 2014	Author of problems for Bulgarian Tournaments in Informatics
	Lecturer at National Informatics Camps
	National Committee in Informatics, Bulgarian Ministry of Education

Industry

Software Engineer at Search ⊃ Knowledge ⊃ Infrastructure
Google Zurich

Awards

the competitions are National Bulgarian if nothing else stated

1st place	"Minko Balkanski" Competition in Informatics '08
11th place	TopCoder High School Finals, West Lafayette, USA '08
1st place	Autumn Tournament in Informatics '07
1st place	Student Competition for the Dean's cup of Sofia University '07
2nd place	International Young Physicists Tournament (regional, in team) '06
1st place	"Rumen Grozdanov" Informatics and Mathematics Tournament '06
1st place	Winter Tournament in Informatics '06

- Awarded as a **National Laureate in Informatics**, Bulgaria '08
- Scholarship for **science achievements** of American Foundation for Bulgaria '07–'08
- Participated in the **final rounds** of the Bulgarian Olympiad in Informatics '05–'08
- Participated in the **final rounds** of the TopCoder High School, West Lafayette, USA '07–'08
- Participated in the **final rounds** of "Musala Soft and PC Magazine" competition '07–'08

General skills

Algorithms:	Graphs, Combinatorics, Strings, Geometry, Optimization, Dynamic Programming
Programming:	**C/C++ (STL)**, Python (NumPy, SciPy, MatPlotLib), MATLAB
Tools:	Unix, Bash, Vim, Git, LaTeX
Speaks:	English, Russian, Bulgarian

Activities

- Solving algorithmic problems   // TopCoder, Timus, Rosalind
- Supporting crowdsourcing, FOSS and open data
- Editing wikipedia and a personal wiki
- Running and paragliding   // **42.195km in 3:43h**, Zelenograd, Russia, Dec 2011
      // **100km in 13:19h**, Vitosha mountain, Bulgaria, 2012
- Meditation   // Goenka's 10-day meditation retreat, 2020