

# Pesho Ivanov

BORN: 29 MAY 1989 IN SHUMEN, BULGARIA  
EMAIL: [IVANOV@PESHO.INFO](mailto:IVANOV@PESHO.INFO)  
URL: [SRI.INF.ETHZ.CH/PEOPLE/PESHO](http://SRI.INF.ETHZ.CH/PEOPLE/PESHO)



## SUMMARY

PHD STUDENT AT ETH ZURICH WITH STRONG BACKGROUND IN GENETICS, ALGORITHMS AND DATA STRUCTURES. ALWAYS ENJOYED INFORMATICS COMPETITIONS. WORKED AS A SOFTWARE ENGINEER AT GOOGLE. LOVES TEACHING AND COMMUNICATING SCIENCE.

## GENERAL SKILLS

ALGORITHMS: GRAPHS, COMBINATORICS, STRINGS, GEOMETRY, OPTIMIZATION, DYNAMIC PROGRAMMING  
PROGRAMMING: C / C++ (STL), PYTHON (NUMPY, SCIPY, MATPLOTLIB), RUBY, MATLAB  
TOOLS: UNIX, BASH, VIM, GIT,  $\text{\LaTeX}$   
SPEAKS: ENGLISH, RUSSIAN, BULGARIAN

## EDUCATION

APR 2015 — FEB 2017	MASTER DEGREE IN <b>Software Engineering</b> ( <i>extra-mural</i> ) THESIS: <i>Framework for Genomic Reconstruction Algorithms</i> SHUMEN UNIVERSITY, BULGARIA
JUN 2014	BACHELOR DEGREE IN <b>Computer Informatics</b> SHUMEN UNIVERSITY, BULGARIA <small>↑ TRANSFERRED BECAUSE OF AN ADMINISTRATIVE BAN TO ENTER RUSSIA</small>
SEP 2009 — JUN 2013 (interrupted by visa issues)	SPECIALIST DEGREE ( <i>equivalent to Bachelor+Master</i> ) IN <b>Applied Mathematics and Informatics</b> MOSCOW STATE UNIVERSITY, RUSSIA // CALCULUS, COMPUTER VISION
SEP 2008 — JUN 2009 (moved to Moscow University)	BACHELOR DEGREE IN <b>Computer science</b> // + LED SEMINARS IN ADVANCED ALGORITHMS 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 ( <i>not accredited</i> ) IN <b>Bioinformatics</b> // + 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	<p>INTERNSHIP ON MODERN BIOTECH TECHNOLOGIES</p> <p>// GENOME ASSEMBLERS, SINGLE-CELL TRANSCRIPTOMICS, T-CELL RECEPTOR RECONSTRUCTION, MACHINE LEARNING</p> <p><i>supervised by Prof. Martin Vechev, <a href="#">Software Reliability Lab</a>, ETH Zurich</i></p> <p><i>collaborating with PD Dr. Emmanuella Guenova, <a href="#">Dermatology Clinic</a>, University of Zurich</i></p>
JUL 2013 – AUG 2013	<p>SUMMER INTERNSHIP ON <a href="#">SPADES</a> OPEN SOURCE GENOME ASSEMBLER // <a href="#">CHIMERAS</a> PRESENTATION</p> <p>// PROOF OF CONCEPT: REPLICATION BUGS TO ENHANCE ASSEMBLY IN OPEN SOURCE ASSEMBLER</p> <p><i>supervised by Dr. Pavel Pevzner, <a href="#">Algorithmic Biology Lab</a>, St. Petersburg Academic University</i></p>
SEP 2012 – JUN 2013	<p>MICROBIOLOGICAL MODELS DESIGNER // <a href="#">MICROCIN</a> MODELLING</p> <p><i>supervised by Prof. Konstantin Severinov, <a href="#">Institute of Gene biology</a>, Russian Academy of Sciences</i></p>
JUL 2012 – AUG 2012	<p>RESEARCH INTERNSHIP ON PROBABILISTIC VERIFICATION OF BIOLOGICAL MODELS</p> <p>// INSISTED ON MY OWN TOPIC ON VIRUS-BACTERIA INTERACTION <a href="#">[SUMMARY]</a></p> <p><i>supervised by Prof. Martin Vechev, <a href="#">Software Reliability Lab</a>, ETH Zurich</i></p>
JUL 2011 – AUG 2011	<p>COMPUTATIONAL GEOMETRY ALGORITHMS LIBRARY (<a href="#">CGAL</a>) INTERNSHIP</p> <p><a href="#">GOOGLE SUMMER OF CODE</a> // IMPLEMENTED TOPOLOGICAL OPERATORS ON TETRAHEDRAL MESHES</p>
JUL 2007 – SEP 2007	<p>DEVELOPER OF A BIN-PACKING GENETIC ALGORITHM FOR GLASS CUTTING OPTIMIZATION</p> <p><a href="#">Telepol Net</a>, Bulgaria // APPRECIATING EVOLUTION AND FIRST ALGORITHM IN PRODUCTION</p>

## TEACHING

SEP 2015 (EXP.)	<p>SUPERVISOR OF HIGH SCHOOL STUDENTS // LEADING AN EVOLUTIONAL COMPUTATIONAL PROJECT</p> <p><a href="#">Science&amp;Arts school “Science Xplore”</a>, VISEU, PORTUGAL</p>
NOV 2013 – JUN 2014	<p>STUDENTS INFORMATICS COMPETITIONS TRAINER // MEANWHILE SKETCHING AN ALGORITHMIC TEXTBOOK</p> <p><a href="#">Mathematics and Informatics Private School “A&amp;B”</a>, SHUMEN, BULGARIA</p>
NOV 2013 – JAN 2014	<p>TECHNICAL ASSISTANT IN A Coursera <a href="#">BIOINFORMATICS COURSE</a> // LECTURES EDITING, FORUM EXPLANATIONS</p> <p><i>supervised by Dr. Pavel Pevzner, UNIVERSITY OF CALIFORNIA, SAN DIEGO</i></p>
AUG 2010	<p>LECTURER AT SCHOOL STUDENTS INFORMATICS CAMP // STRONGEST RUSSIAN COMPETITORS</p> <p><a href="#">Russian Summer Informatics Camp</a>, Saratov</p>
MAR 2008 – JUN 2009	<p>ASSISTANT IN “DESIGN AND ANALYSIS OF ALGORITHMS” COURSE // LED SEMINARS TO A GROUP OF 20 PEOPLE</p> <p><i>Faculty of mathematics and informatics, Sofia University, BULGARIA</i></p>
SEP 2008 – JUN 2009	<p>JURY, ORGANIZER, TESTER AND AUTHOR OF THE PROBLEMS IN <a href="#">ONLINE PROGRAMMING TOURNAMENT</a></p> <p><a href="#">Musala Soft</a>, Bulgaria // MAINLY DISCRETE OPTIMIZATION PROBLEMS</p>
SEP 2008 – JUN 2009, 2013 – 2014	<p>AUTHOR OF PROBLEMS FOR BULGARIAN TOURNAMENTS IN INFORMATICS</p> <p>LECTURER AT NATIONAL INFORMATICS CAMPS</p> <p><i>National Committee in Informatics, Bulgarian Ministry of Education</i></p>

## INDUSTRY

SEP 2014 — NOW	SOFTWARE ENGINEER AT SEARCH ⊃ KNOWLEDGE ⊃ INFRASTRUCTURE <i>Google Zurich</i> // <a href="#">BIG DATA AND PIPELINES</a>
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*the competitions are National Bulgarian if nothing else stated*

## AWARDS

1 <sup>ST</sup> PLACE	“MINKO BALKANSKI” COMPETITION IN INFORMATICS ’08
11 <sup>TH</sup> PLACE	TOPCODER HIGH SCHOOL FINALS, WEST LAFAYETTE, USA ’08
1 <sup>ST</sup> PLACE	AUTUMN TOURNAMENT IN INFORMATICS ’07
1 <sup>ST</sup> PLACE	STUDENT COMPETITION FOR THE DEAN’S CUP OF SOFIA UNIVERSITY ’07
2 <sup>ND</sup> PLACE	INTERNATIONAL YOUNG PHYSICISTS TOURNAMENT (REGIONAL, IN TEAM) ’06
1 <sup>ST</sup> PLACE	“RUMEN GROZDANOV” INFORMATICS AND MATHEMATICS TOURNAMENT ’06
1 <sup>ST</sup> 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

## ACTIVITIES

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| • SOLVING ALGORITHMIC PROBLEMS                              | // <a href="#">TOPCODER</a> , <a href="#">TIMUS</a> , <a href="#">ROSALIND</a>   |
| • SUPPORTING OPEN-SOURCE                                    | // <a href="#">GITHUB PROFILE</a>  |
| • FOUNDED A PROJECT FOR DESCRIBING EDUCATIONAL SYSTEMS      | // <a href="#">STUDENTS-ABROAD.INFO</a>  |
| • ENJOYING HIKING, BIKING, DANCING, PARAGLIDING AND RUNNING | // <a href="#">42.195km in 3:43h</a> , <a href="#">ZELENOGRAD</a> , RUSSIA, DEC 2011<br>// <a href="#">100km in 13:19h</a> , <a href="#">VITOSHA MOUNTAIN</a> , BULGARIA, 2012 |