

BORIS BOUTKOV

PERSONAL DATA

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OBJECTIVE

OBTAIN A FULL TIME COMPUTATIONAL ENGINEERING POSITION IN AN INNOVATIVE, SCIENTIFICALLY DRIVEN ORGANIZATION.

WORK EXPERIENCE

- NOV 2019 - PRESENT | SENIOR → LEAD, GENOMIC DATA ENGINEER AT REGENERON
PRODUCING HIGH QUALITY QUANTITATIVE SOLUTIONS AND ENTERPRISE DATA PIPELINES FOR GENETIC DATA AT SCALE. ENABLING STATISTICAL ANALYSIS, DEVELOPING BIOINFORMATICS TOOLS & ALGORITHMS, AND OPTIMIZING PRODUCTION WORKFLOWS FOR NEXT GENERATION ANALYTICS TOOLS IN THE CLOUD. LED A VPC→PUBLIC CLOUD DATA MIGRATION, HELPED DESIGN: ETLs, ERDS, BROWSER BACKEND ARCHITECTURES, DATA GOVERNANCE MODELS, DASHBOARDS, AND CICD INFRASTRUCTURE ACROSS VARIOUS BUSINESS UNITS.
- SEP 2012 - MAY 2019 | GRADUATE RESEARCHER AND TEACHING ASSISTANT AT U. BUFFALO
RESEARCHER: DEVELOPED PARAMETER AGNOSTIC PDE SOLVER FOR COMPOSABLE MULTI-PHYSICS SIMULATIONS IN LIBMESH - A DISTRIBUTED, OPEN SOURCE, C++ LIBRARY
TEACHING: CALCULUS 1,2,3, LINEAR ALGEBRA, DIFFERENTIAL EQUATIONS, HIGH PERFORMANCE COMPUTING
- DEC 2010 - JUN 2012 | DEVELOPER/ANALYST AT AMKAI SOLUTIONS IN ARMONK, NEW YORK
HELPED DESIGN AND DEVELOP A LARGE HEALTH SOFTWARE PROJECT INVOLVING JAVA, SQL, AND XML INTEGRATION. EXPERIENCE WITH PROJECT MANAGEMENT, DATABASE ANALYSIS, AND ALGORITHM OPTIMIZATION.
- JAN 2009 - MAY 2010 | MATHEMATICAL RESEARCHER AT R.P.I.
QUANTIFIED DISEASE PROPAGATION VIA STOCHASTIC EPIDEMIOLOGY STUDIES OVER VARIOUS SOCIAL NETWORK TOPOLOGIES. STUDIED DISEASE AND IMPACT MINIMIZATION STRATEGIES VIA PARAMETER SENSITIVITY ANALYSIS.

EDUCATION

- SEP 2014 - MAY 2019 | PH.D. IN COMPUTATIONAL AND DATA ENABLED SCIENCES
UNIVERSITY AT BUFFALO, BUFFALO, NY
THESIS | GEOMETRIC MULTIGRID FOR UNSTRUCTURED FINITE ELEMENTS: IMPLEMENTATION AND APPLICATIONS
- SEP 2012 - MAY 2014 | MASTERS IN MATHEMATICS
UNIVERSITY AT BUFFALO, BUFFALO, NY
- SEP 2006 - MAY 2010 | B.S. DUAL DEGREE IN APPLIED MATHEMATICS AND PHYSICS
RENSELAEER POLYTECHNIC INSTITUTE, TROY, NY
THESIS : RISK PERCEPTION IN EPIDEMIC MODELING WITH HETEROGENEOUS CONNECTION STRENGTHS
MINORS : PHILOSOPHY, PSYCHOLOGY | DEANS LIST : FALL 2006 - SPRING 2009

SELECT PRESENTATIONS, PUBLICATIONS, AND AWARDS

- NOV 2023 | BIORxIV: A DEEP CATALOG OF PROTEIN-CODING VARIATION IN 985,830 INDIVIDUALS
- MAY 2021 | NATURE GENETICS: COMPUTATIONALLY EFFICIENT WHOLE-GENOME REGRESSION FOR QUANTITATIVE AND BINARY TRAITS
- MAY 2019 | PH.D. DISSERTATION: GEOMETRIC MULTIGRID FOR UNSTRUCTURED FINITE ELEMENTS: IMPLEMENTATION AND APPLICATIONS
- APRIL 2019 | UB CDSE BEST RESEARCH POSTER AWARD
- MARCH 2017 | SIAM CONFERENCE ON COMPUTATIONAL SCIENCE AND ENGINEERING, BOSTON, MA
PRESENTED: (TOWARDS A) VARIATIONAL IMMERSED BOUNDARY IMPLEMENTATION THROUGH GRINS AND LIBMESH
- DEC 2014, 2015 | U. BUFFALO COMPUTATIONAL DATA SCIENCE FELLOWSHIP
- JUNE 2014 | MATHEMATICAL PROBLEMS IN INDUSTRY, NEW JERSEY INSTITUTE OF TECHNOLOGY
INVESTIGATED VARIOUS PROBLEMS POSED BY INDUSTRIAL REPRESENTATIVES WHILE PEER REVIEWING PARTNER GROUPS IN WEEK LONG EXPLORATORY PROJECT SPRINTS. PRESENTED: A SMOOTH RIDE ON A BUMPY ROAD, MODELING AND NUMERICAL INVESTIGATION OF VEHICLES DRIVING ON BUMPY ROADS.

LANGUAGES AND COMPUTER SKILLS

- PROFICIENT | RUSSIAN, PYTHON, C++/C, SCALA, (PY)SPARK, SQL, AWS(S3/EC2/ATHENA/RDS/CODECOMMIT),
DATABRICKS, GIT, (ARCH)LINUX, HPC SYSTEMS, SLURM, REST APIS, JIRA, L^AT_EX
- WORKING KNOWLEDGE | SPANISH, MPI, MATLAB/OCTAVE, MAPLE, MATHEMATICA, JAVA, HTML, CSS