Antonín Novák

PERSONAL INFO

Date of birth: 26. 03. 1991
Brandys nad Labem
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OBJECTIVE

Research and development of optimization algorithms and methods for real-life problems.

EDUCATION

2015 - 2022 (expected) *Ph.D. in Operations Research, Scheduling and Combinatorial Optimization*, Faculty of Electrical Engineering, Czech Technical University in Prague

2013 - 2015 *Master of Computer Science, Major: Artificial Intelligence*, Faculty of Electrical Engineering, Czech Technical University in Prague - graduated with honours at the Department of Computer Science

2010 - 2013 *Bachelor of Cybernetics and Robotics, Major: Robotics*, Faculty of Electrical Engineering, Czech Technical University in Prague - graduated with honours at the Department of Cybernetics

2006 - 2010 *Arabská Grammar School in Prague*, computer science class

EXPERIENCE

Research assistant at Czech Institute of Informatics, Robotics and Cybernetics, Czech Technical University in Prague (CIIRC CTU) 07/2015–now

- Research in flexible, robust and stochastic scheduling (2017–now).
- Pricipal investigator of CTU for the project OP PIK – Connected Motor Starter (2021–now)
- Machine learning consultant for ADAS projects at Porsche Engineering (2021–now)
- Analysis, simulation and the optimization of diagnostic laboratory workflow for Beckman Coulter (2020–2022).
- Principal investigator of CTU for the project OP PIK – Factory of Future (2017–2019).
- Research in mixed-criticality scheduling (2015–2017).

Machine Learning Engineer at Porsche Engineering 2016–2018

- Research, design and development of ML-based system with connected cars for road condition prediction (09/2017–11/2018).

- Conversion software for importing scanned data of racing circuits into the computer simulator (02/2016–04/2016).

Graduate student at Industrial Informatics Group at FEE CTU 2014–now

- Working on combinatorial optimization problems related to mixed-criticality, stochastic and distributionally robust scheduling.

Undergraduate assistant at Cloud Computing Center FEE CTU 2012–2014

- Research of regularities and patterns in distributed continuous word representations (2013–2014).
- Project for Seznam.cz (Czech major web search engine) to design and implement query corrector for web search engine during (2012–2013).

TEACHING

Combinatorial Algorithms course *2022–now*
Combinatorial Optimization course *2016–now*

SPOKEN LANGUAGES

Czech (native), English (fluent), Russian (passive)

SKILLS

General: Strong mathematical and statistics background, optimization, machine learning, programming & algorithmic skills
Languages & Software: Python, Java, Matlab, Wolfram Mathematica
Framework & Tools: TensorFlow, Keras, scikit-learn, Gurobi Optimizer, CP Optimizer

INTERNSHIPS

2016 *European Space Operations Center (ESA ESOC)* , Darmstadt, Germany
2011 *Google*, GWT & AppEngine training, Google Office in Krakow
2011 *Innovation and Creativity summer course*, Copenhagen Technical University, Denmark

AWARDS

2021 Dean's award for the supervisor of the outstanding master thesis
2019 Best Student Paper Award, ICORES-19
2019 Dean's award for the supervisor of the outstanding master thesis
2018 Dean's award for the best faculty teacher
2015 UPE Scholarship Award
2010 3rd prize in Česká Hlavička contest (country-wide young researches contest)
2010 1st prize in SOČ, National Round (Czech high school student contest, category Communication and Engineering)
2009 3rd - 4th in Mathematical Olympics, category Programming, Prague round

SELECTED PUBLICATIONS

Novák, A.; Gnatowski, A.; Šůcha, P. *Distributionally robust scheduling algorithms for total flow time minimization on parallel machines using norm regularizations*, European Journal of Operational Research. 2022, (Q1 journal).

Novák, A.; Hanzálek, Z. *Computing the execution probability of jobs with replication in mixed-criticality schedules*, Annals of Operations Research. 2022, (Q1 journal).

R. Stec, A. Novak, P. Sucha, Z. Hanzalek. *Scheduling Jobs with Stochastic Processing Time on Parallel Identical Machines, IJCAI-19, 2019, main track (CORE A*), 10.24963/ijcai.2019/781*