Alvis **Logins**

Ph.D. in Computer Science

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Summary

I am a PhD in Computer Science, recently graduated from Aarhus University. During my PhD studies, I worked on optimization algorithms for node selection problems in large-scale networks, such as road networks and social networks. My main areas of interest are Graph Algorithms, Statistical and Predictive Analysis, Query Optimization, and Machine Learning. My background includes degrees from the world top universities, rich research and industrial experience, and a diverse practice of teaching and supervision.

Education

Aarhus University
Aarhus, Denmark

PhD in Computer Science
November 2016 – April 2020

- *Topic of the thesis*: Resource Allocation in Networks. *Main supervisor*: prof. Panagiotis Karras.
- *Relevant courses*: Aspects of Advanced Analytics, Big Data Management on Modern Hardware, Probabilistic Network Analysis, Route Planning in Transportation Networks, Social Graph Analytics.
- Research was partially conducted under the affiliation of Aalborg University, Denmark.
- Education includes two internships in University of Macau (prof. Leong Hou U), and Singapore Management University (prof. Yuchen Li).

Skolkovo Institute of Science and Technology (Skoltech)
Moscow, Russia

M.S. in Information Technology [Double Degree with Moscow Institute of Physics and Technology]
September 2014 – August 2016

- Graduated with GPA 4.5/5 (90%)
- Master Thesis topic: Data-driven Algorithms for Spatial Network Flow Problems.
- *Relevant courses*: Data Management, Multicore Algorithms, Computational Mathematics, Data Mining, Optimization Methods, Representation Learning and Deep Learning.

Massachusetts Institute of Technology (MIT)
Boston, USA

M.S. in Computer Science [Exchange Program with Skolkovo Institute of Science and Technology]
September – December 2015

- Developed a distributed relaxation-based algorithm for bipartite matching problem under supervision of prof. Nancy Lynch as a part of Distributed Algorithms course.
- *Relevant courses*: Software Engineering and Optimization, Distributed Algorithms, Statistics.

Moscow Institute of Physics and Technology (MIPT)
Moscow, Russia

B.S.&M.S. in Applied Physics and Mathematics
September 2010 – August 2016

- Graduated BSc with GPA of 4.6/5 (92%)
- Graduated Department of General and Applied Physics with admission GPA requirement of 94%
- MIPT rated as a university #48 in Physical Sciences, and #67 in Computer Science according to the THES world rank.

Zolitudes Gymnasium
Riga, Latvia

General Upper Secondary Education
September 2007 – August 2010

- Major in Mathematics, Grade Point Average of 9.9/10 (99%)
- Participated in the International Physics Olympiad (IPhO) 2010 in Croatia.
- Medalist of numerous State Olympiads in Mathematics, Physics and Informatics.

Research Experience

Computer Science Department, Aarhus University
Aarhus, Denmark

PhD Candidate & Research Assistant at Data–Intensive Reseach Group
November 2018 – May 2020

- Worked on optimization problems in large-scale networks, such as Facility Location, Node Immunization, Robust Diffusion Control, and Taxi Dispatching problems. Main supervisor: prof. Panagiotis Karras.

Computer Science Department (Cassiopea), Aalborg University   *Aalborg, Denmark*

PHD CANDIDATE AT CENTER FOR DATA INTENSIVE SYSTEMS (DAISY)   *November 2016 – November 2018*

- Published a new heuristic approach for the capacitated k-median problem. Worked in collaboration with prof. Christian S. Jensen.

Skolkovo Institute of Science and Technology   *Moscow, Russia*

RESEARCH ASSISTANT AT DATA SCIENCE AND ENGINEERING RESEARCH GROUP   *September 2014 – August 2016*

- Created and analysed an algorithm for in-memory spatial join that uses hierarchical data-oriented space partitioning, in collaboration with prof. Panagiotis Karras and Sadegh Nobari.
- Developed a novel algorithm that combined cost scaling algorithm for circulation problem and pruning technique based on incremental nearest neighbor search and spatial indexing.

Information Management Systems Institute (IMSI)   *Athens, Greece*

INTERN AT RESEARCH CENTRE IN INFORMATION, COMMUNICATION AND KNOWLEDGE TECHNOLOGIES "ATHENA"   *June 2015 – August 2015*

- Investigated state-of-the-art approaches for spatial object analysis.

Moscow Institute of Physics and Technology   *Moscow, Russia*

RESEARCH ASSISTANT AT LABORATORY OF INNOVATIVE PROTEIN RESEARCH   *September 2012 – August 2014*

- Investigated protein structure rigidity based on statistical analysis of structural databases and optimization problems.

INRIA Rhone-Alpes Research Center   *Grenoble, France*

INTERN AT NANO-D RESEARCH GROUP   *June 2013 – August 2013*

- Examined novel techniques of molecular modeling.
- Conducted coarse-grained protein simulations.

Publications

- A. Logins, L. H. U, P. Karras, "Fair Taxi Cruising", Under submission to *Proceedings of ACM SIGKDD*, 2020.
- A. Logins, Y. Li, P. Karras, "On the Robustness of Cascade Diffusion under Node Attacks", In *Proceedings of the Web Conference*, 2020.
- A. Logins, P. Karras. "Content-Based Network Influence Probabilities: Extraction and Application." In *Proceedings of the 2019 International Conference on Data Mining Workshops (ICDMW)*, 2019, pp. 69–72
- A. Logins, P. Karras, "An Experimental Study on Network Immunization", In *Proceedings of the 23rd International Conference on Extending Database Technology (EDBT)*, 2019, pp. 726–729.
- A. Logins, P. Karras, C. S. Jensen, "Multicapacity Facility Selection in Networks", In *Proceedings of the 35th IEEE International Conference on Data Engineering (ICDE)*, 2019, pp. 794–805.
- A. Logins, "Node Selection in Large Networks", In *the 35th IEEE International Conference on Data Engineering (ICDE) PhD Symposium*, 2018
- A. Logins, S. Grudinin, "Protein structure rigidity simulation based on statistical analysis of structural databases and optimization problems", In *Proceedings of the 59th All-Russian MIPT Scientific Conference*, 2014. Best paper award in the "Research on Nanostructures" section.

Industrial Experience

Habidatum   *Moscow, Russia*

DATA ANALYST   *June – November 2016*

- Developed a model for Point Of Interest ranking and behavioral pattern mining, using spatio-temporal data and social networks.
- Created a mass appraisal prediction model based on social media and geodata.

Freelance

FULL STACK WEB DEVELOPER   *July 2010 – August 2016*

- Headed a team development of a web application for a fintech startup company with more than 5.000 customers.
- Implemented more than 20 projects for individuals, educational institutions and small companies.

Skills

- Professional in C/C++, Python. Have experience with TensorFlow, Pandas, Dask, Apache Airflow, nltk, and other data science tools.
- Familiar with MATLAB, R, VisualBasic, Scala, SQL, Wolfram Mathematica, Assembly, Haskel, Lisp, Prolog, Latex, Git, JavaScript, php.
- Languages: Russian (native), English (fluent), Latvian (advanced), French (beginner).