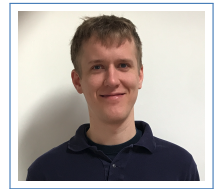


Sebastian Loeschcke

Aarhus University
Computer Science

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Profile

I am a curious, detail-oriented, energetic computer science student skilled in problem-solving, with excellent observational and communication skills and a strong foundation in math. I thrive in collaborative working environments, where people combine their different strengths and challenge each other's way of thinking. I have a great passion for deep learning, computer vision and data visualization with a strong theoretical background from course work and research projects at Aarhus University and hands-on experience from my data science position at Systematic.

Education

- 2021 – Now **Master**, *Computer Science, Aarhus University.*
Grade avg. 12/12
- 2018 – 2021 **Bachelor**, *Computer Science, Aarhus University.*
Grade avg. 11.1/12
- 2013 – 2016 **High School**, *Aarhus Katedralskole.*
Grade avg. 11.1/12

Research Experience

- Dec 2021 – **Text-driven Manipulation of Objects in Videos**, *Prof. Ira Assent, Aarhus University, and postdoc*
Now *Sagie Benaim, Copenhagen University.*
- Developing a deep learning model for text-driven manipulation of objects in videos via text prompts.
- Sep 2021 – **Pattern-based Discovery of Deterioration Processes in Plant-based Food Proteins**, *Assoc. Prof.*
Now *Hans-Jörg Schulz and Asst. Prof. Søren Drud-Heydary Nielsen, Aarhus University.*
- Created a visualization tool that supports food scientists in exploratory data analysis of mass spectrometry data from protein samples.
 - I should have presented the tool at Centre for Innovative Food Research Conference, Aarhus University, February 1st 2021 (Postponed due to Covid-19).
 - We are currently working on a paper submission.
- Feb 2022 – **Discovering Top-k Reliable Subgraphs in Uncertain Graphs**, *Asst. Prof. Cigdem Aslay and Assoc.*
Now *Prof. Panagiotis Karras, Aarhus University.*
- Devised sampling schemes using VC-dimension theory to provide ϵ -approximations for the #P-complete problem of discovering the k most reliable subgraphs in uncertain graphs.
- Sep 2020 – **Cancer Type Prediction based on Gene Expression in Blood Samples using Convolutional**
Feb 2021 **Neural Network Models**, *Assoc. Prof. Søren Besenbacher, Asst. Prof. Lasse Maretty Sørensen and director of the Bioinformatics Research Center Christian Pedersen, Aarhus University.*
- Implemented and designed Convolutional Neural Network for cancer prediction in blood samples.
 - More accurate models were published while the project was still ongoing.
- Sep 2019 – **Progressive Parameter Space Visualization for Task-Driven SAX Configuration**, *Assoc. Prof.*
June 2020 *Hans-Jörg Schulz, Aarhus University.*
- Investigated how to find the right trade-off between data reduction and remaining utility of the data using Progressive Visual Analytics.
 - Published and presented a paper at the International EuroVis Workshop on Visual Analytics (EuroVA)[1]
 - The Computer Science department at Aarhus University published an news article about my achievements: <https://cutt.ly/LyVT7lr>

Publications

Loeschcke, Sebastian, M. Hogräfer, and H.-J. Schulz, "Progressive Parameter Space Visualization for Task-Driven SAX Configuration," in *EuroVis Workshop on Visual Analytics (EuroVA)* (C. Turkay and K. Vrotsou, eds.), The Eurographics Association, 2020.

Work Experience

- May 2021 – **Junior Data Scientist**, SYSTEMATIC.
Now
 - Read scientific literature and apply machine learning models to Systematic's software products.
 - Implemented various deep learning models, e.g. an LSTM autoencoder for anomaly detection and a few-shots learning Siamese neural network for recognizing handwritten symbols.
- March 2020 – **Teaching Assistant - Pre-Talent Track CS Department**, AARHUS UNIVERSITY.
June 2020 &
 - Organized and guided activities for students, including presentations based on my research.
- March 2021 –
June 2021
 - Assessed student assignments.
- Jan 2014 – **High School Tutor and Study Café Coordinator**, AARHUS KATEDRALSKOLE.
June 2016
 - Planned time schedules for all tutors.
 - Provided academic support to students in Math, Chemistry, Physics, Social Studies, English and German.

Achievements

- 2018 – 2021 **Bachelor degree with distinction.**
 - During my bachelor's degree I have done 30 ECTS extracurricular activities by being enrolled in the Talent Track program at the Computer Science Department, Aarhus University.
 - The Talent Track offers bachelor students the opportunity to come in close contact with current research topics being pursued at the Computer Science department.
- May 2020 **Published and presented a paper at an international conference.**
 - I published my first peer-reviewed paper in my second year at uni and presented my research at the International EuroVis Workshop on Visual Analytics (EuroVA)[1].

Skills

Languages Python, Java, C/C++, Go, Scala, OCaml, SQL
Frameworks PyTorch, Tensorflow, Keras
WebD HTML/CSS, JavaScript
Utilities Anaconda, Git
Communication Danish, English, German

References

Hans-Jörg Schulz,
Assoc. Prof.,
Aarhus University,
Computer Science Department,
hjschulz@cs.au.dk.

Christian Storm Pedersen,
Director and Assoc. Prof.,
Aarhus University,
Bioinformatics Research Center,
cstorm@birc.au.dk.

Cigdem Aslay,
Asst. Prof.,
Aarhus University,
Computer Science Department,
cigdem@cs.au.dk.

Sebastian Bugge Loeschcke



Date 10.12.2021

It is hereby confirmed that Sebastian Bugge Loeschcke, Civil Registration Number: [REDACTED] is enrolled as a student at Aarhus University.

Name of the education: **Bachelor's Degree Programme**

The student graduated on 23.06.2021.

The student has passed the following subjects.

The credits are shown in ECTS

	Marks	ECTS-scale	Credits
Bachelor's Degree Programme, Computer Science and Science	passed		180
Central Subject, Computer Science	passed		180
Compulsory Courses	passed		125
Computability and Logic	12	A	10
Computer Architecture, Networks and Operating Systems	Pass		10
Distributed Systems and Security	12	A	10
Experimental System Development	Pass		10
Philosophy and Ethics of Computer Science and IT	10	B	5
Product Development			
Foundations of Algorithms and Data Structures	12	A	10
Human-Computer Interaction	12	A	10
Implementation and Applications of Databases	12	A	5
Introduction to Databases	12	A	5
Introduction to Programming	12	A	10
Optimization	12	A	10
Compilation	12	A	10
Programming Languages	10	B	10
Software Engineering and Architecture	10	B	10
Additional Courses	passed		30
Calculus Beta	10	B	10
Introduction to Probability Theory and Statistics	7	C	10
Linear Algebra	10	B	10
Elective Courses	passed		10
Machine Learning	12	A	10
Bachelor's Project	passed		15
Bachelor's Project in Computer Science	12	A	15



Graduation with distinction

Pursuant to the Ministerial Order no. 597 of March 8 2015 on talent initiatives at the higher education degree programmes, additional educational activities are offered to support and strengthen the efforts for particularly talented students at the university.

The student has through the Challenge/Talent Track programme passed: **30 ECTS**

Sebastian Bugge Loeschcke

has obtained the following results:

	<u>7-point scale</u>	<u>ECTS scale</u>	<u>Passed</u>
Selected Topics from Cryptography; Hacking; Data and Visualization; Logic Programming 5 ECTS			Passed
Selected Topics from Algorithms; Cryptography; Logic and Semantics; Human-Computer Interaction; Ubiquitous Computing 5 ECTS			Passed
Project Work with Topics from Ubiquitous Computing and Interaction 5 ECTS			Passed
Project Work with Topics from Bioinformatics 5 ECTS			Passed
Project Work with Topics from Data-Intensive Systems 10 ECTS			Passed

The validity of this document is confirmed

Aarhus, 6 July 2021

Tanja Kragbæk Vilhelmsen
Administrative Officer

