Sebastian Bertoli

Junior Data Scientist

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Profile

Junior data scientist with first experiences in computer vision, predictive maintenance and data analysis **looking for a research internship in computer vision starting September 2019.**

Experience

Junior Data Scientist / Fraunhofer Italia Research

16 months | March 2018 – June 2019 | Bolzano (IT)

- Co-developed computer vision module for a flexible collaborative robotic system. [1] [2]
- Assessed feasibility of machine-learning-driven quality control for a major Italian manufacturing company.
- Analysed production data and conducted sequential pattern mining experiments as part of the ERDF-funded project "PreMain" (predictive maintenance).

Data Science Intern / Bruno Kessler Foundation

3 months | July 2017 – September 2017 | Trento (IT)

- Assisting "big data"- research investigating the mobility patterns of U.S. cities.
- Implementation of high performance stop-location extraction and clustering algorithm.
- Data visualization of human mobility patterns and stop locations with ggplot and Tableau.

Teaching Assistant in Python programming / Tilburg University

6 months | February 2016 – July 2016 | Tilburg (NL)

- Developed Jupyter notebooks teaching students the fundamentals of data visualisation in Python.
- Supervised lab sessions and assisted students with lab assignments.

Creative Retoucher & IT / Recom Digital Image Production

3 years | September 2011 – September 2014 | London (UK)

- Part of an award-winning team of digital artists specialised in creating computer generated imagery for the automobile industry.
- Wrote technical manuals facilitating company-wide knowledge sharing.

Formal Education

MSc Artificial Intelligence / University of Amsterdam

1 year | September 2016 – June 2017 (18/120 ECTS) | Amsterdam (NL)

- Expanded machine learning knowledge through theoretical study and Python implementations.
- Implemented information retrieval ranking models (TF-IDF, BM25, etc.) and undertook course in data mining.
- Data mined health data and the infamous Expedia dataset.

MSc Data Science (Cum Laude) / Tilburg University

2 years | September 2015 – June 2017 (60/60 ECTS) | Tilburg (NL)

- Thesis: Automatic classification of vessels using historic AIS navigation data.
- Took additional courses in data mining, data protection, law and programming.*
- Consistently achieved strong grades (GPA > 8.0).

MA Media Studies / University of Amsterdam

1 year | September 2014 – June 2015 (48/60 ECTS) | Amsterdam (NL)

- Co-developed the concept for a university-wide interdisciplinary knowledge-sharing and collaboration platform called the "UvA Research Hub".
- Co-authored 60-page study on Amsterdam's Open Data culture.
- Consistently achieved strong grades (GPA > 8.0).

BA Media Studies (First Class Honours) / University of the Arts

3 years | September 2010 – June 2013 | London (UK)

- BA thesis: Massive Open Online Courses in the UK: A critical analysis of the driving forces behind the e-learning phenomenon.

Projects

CSCI1430 Introduction to Computer Vision / Brown University

https://github.com/sebastianbertoli/csci1430

The course provides an introduction to computer vision, including fundamentals of image formation feature detection and matching, image classification and scene understanding to mention just a few. So far I have implemented various image filters using Python as well as a (strongly) simplified version of SIFT. I am aiming to complete the course by September 2019.

CS231N CNN for visual recognition / Stanford University

https://github.com/sebastianbertoli/cs231n

This course teaches the details of deep learning architectures with a focus on learning end-to-end models for image classification. I have completed almost all assignments between September 2018 and January 2019.

Extracting destinations from GPS data / Internship

https://sebastianbertoli.github.io/demos/human-mobility/

This project was carried out during my summer 2017 research internship at the Bruno Kessler foundation in Trento (Italy). The goal was to implement a fast algorithm that could extract destinations (places where people stay) from GPS data.

Classifying vessels using historical AIS data / Master Thesis

https://github.com/sebastianbertoli/UvT-Thesis

Built a machine learning model using semantic knowledge in order to automatically classify ships based on their historical navigation data.

Publications

[1] Giusti Andrea, Steiner Dieter and Bertoli Sebastian (2018) Entwicklung eines flexiblen, inkrementell lernenden Programmiersystems für kollabo- rative Roboterapplikationen. In: D. Matt, ed., KMU 4.0 - Digitale Transformation in kleinen und mittelständischen Unternehmen. [online] Berlin: GITO, pp.233-248. Available at: https://bit.ly/2Rb5cQF [Accessed 19 Oct. 2018].

[2] Giusti Andrea et. al. (2019). Kollaborative Robotik – Maschinelles Lernen durch Imitation. In: Industrie 4.0 Management 35-3(2019). Available at: https://www.industrie40-management.de/node/275 [Accessed 02 Jul. 2018].

Languages

German: native

English: full working proficiency (C2)

Italian: native

Dutch: beginner (A2)

Tech stack

Languages: Python, R.

Libraries: numpy, scipy, dplyr, scikit-learn, opencv, scikit-image, PyTorch.

Visualisation: ggplot, Plotly, Tableau, Vega.

Workflows: Git, Gitlab, Anaconda, Unit testing.

OS: *nix, Windows.