NADER SOBHI

Computer Scientist

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Nader Sobhi
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WHO AM I?

Currently a PhD student at TU Wien. Completed my Masters in Computer Science with a specific focus on distibuted algorithms, parallel computing, and knowledge graphs. I have also worked in industry as a Software Engineer in parallel to my studies and beyond, mainly in financial related industries.

EDUCATION

2026 – Present
Jan –

Ph.D. Computer Science — **Technische Universität Wien**
Vienna, Austria

- Supervisor: **Prof. Dr. Katja Hose**
- Part funding project: **DORSET**
  - Full title: From Structures to Vectors: Decoding How Knowledge Graph Characteristics Shape Embedding Strategies
- Thesis:
  - My research work will be centered around trying to understand how graph structures and properties of Knowledge Graphs affect Knowledge Graph Embeddings. In doing so I will conduct research on related fields such as: databases, graph algorithms, knowledge graphs, and knowledge graph embedding models.

2021 – 2024
Sept – Dec

M.Sc. Computer Science - Big Data Engineering — **Vrije Universiteit Amsterdam & Universiteit van Amsterdam**
Amsterdam, Netherlands

- Overall degree classification: **Cum Laude**
- Grade point average: **8.6/10**
- Teaching Assistant: **Distributed Algorithms - 2022/23** - Lecturer: **Wan Fokkink**
- Research project: **Using vector quantization for the compression of knowledge graph embeddings** - Supervisor: **Jacopo Urbani** - Grade: **9.5/10**
  - The central idea of the project work and reported implementation was to show that knowledge graph embeddings (KGEs) could be compressed in such a way as to limit the loss when the compressed embeddings are decompressed and used for any of the tasks that embeddings can be used for. In the end, a robust codebase that proves this and enables future research into compressed KGEs was created.
- Thesis: **Detection of terminal strongly connected components** - Supervisor: **Wan Fokkink** - Grade: **8.5/10**
  - This work covered the development of a new algorithm for discovering terminal strongly connected components (TSCC) in a graph based on depth-first search (DFS) and ended up being an independently discovered adaptation of Tarjan's algorithm. The algorithm was developed conceptually and then implemented in order to obtain tangible test results on real examples of graphs. The implemented algorithm is able to find all TSCCs and does so faster than algorithms find all SCCs, and it also scales linearly with the size of a graph. Additionally, it provides a good basis for future research into TSCCs and how they can be found with an algorithm that most closely resembles a DFS algorithm.

2016 – 2020
Sept – Jun

B.Sc. (Hons) Computing **Abertay University**
Dundee, Scotland, UK
Modules:

- Overall degree classification: **First-class Honours**
- Grade point average: **4.2/4.5**
- Thesis: **Developed a Hexapod robot (operations coded in Python), remotely controlled using a purpose-built Android application** - Supervisor: **Ethan Bayne** - Grade: **A+**
  - Designed and built, with the assistance of an electrical engineer, a Hexapod robot with two sets of six servos. The first set controlled the "hips", and the second set controlled the "knees" on the legs. I then successfully programmed the robot to walk based on inputs provided by an Android application.

INDUSTRY EXPERIENCE

2025 – 2025
Sept – Dec

Machine Learning Engineer
Amsterdam, Netherlands **o9**
`Python / Rust / Docker / Kubernetes / Azure DevOps`

2023 – 2025
June – Aug

Software Engineer
Amsterdam, Netherlands **Energetech**
`C# / C++ / Docker / Kubernetes / Azure DevOps`

2022 – 2023
Jan – June

Data Engineer **LiteBit**
Amsterdam, Netherlands
`Python / PowerBi / Azure DevOps`

2019 – 2021
Sept – Sept

Software Developer **Banntech LTD**
Dundee, UK
`C# / SQL / Razor / Blazor`

LANGUAGES

English - native
Greek - native
Arabic - rudimentary

INTERESTS

In my free time I love to program, play video games, strength train, cycle, read, listen to music, play guitar, and spend time with friends.

COMPETENCIES

Proficient in C#, Java, Python, C++, HTML, CSS, SQL, JavaScript and jQuery. Lots of experience in the .NET Framework

QUALIFICATIONS

- M.Sc (Cum Laude)
- B.Sc (Hons)
- Cisco CCNA 2
- High School Diploma
- A Levels

ACHIEVEMENTS

- Principals Award at Abertay University
- Graduate Award Plus at Abertay University
- CISCO Letter of Distinction for exceptional performance in course
- Certificate of Achievement (Volunteer) - PASYKAF

REFERENCES

Available upon request