# Summer Internships for MSc&PhD Students

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Amazon

Job description: As a Science Intern in the Alexa Shopping Research team, you will work with top researchers and engineers to explore and devise new AI technologies to predict and satisfy the needs of Alexa’s (Amazon voice assistant) users. During your internship you will research and implement new technologies related to machine learning, including deep learning, search and NLP and will aim at submitting your results to a top research conference.

Ideally, you are enrolled in a PhD program, have strong CS foundations, solid programming skills, have already published at a peer-reviewed conference, and have already some expertise in one or several of the following areas: Information Retrieval, Web data mining, Machine Learning, Natural Language Processing, Computer Vision, Speech, or Artificial Intelligence in general.

Requirements:

BASIC QUALIFICATIONS

- Second year MSc in Computer Science, or related field.
- Submitted a research paper to a top conference.
- Strong CS foundations (data structures and algorithms).
- Proficiency in at least one programming language such as C/C++, Java, or Python.
- Good writing and verbal English skills.

PREFERRED QUALIFICATIONS

- PhD candidate in Computer Science, or related field
- Knowledge of AI-related technologies (e.g., Machine Learning, Deep Learning, Natural Language Processing, Information Retrieval, Computer Vision) and cloud technologies (e.g., AWS)
- Excellent communication and collaboration skills.

Contact details: Julia Volkmann, jvolkman@amazon.de
Microsoft

Applied Science Intern in Alexa Shopping Research

**Job description:** During your 12 weeks internship, you’ll find out what it’s like to work in an industrial research lab and learn from world-leading researchers and engineers who are invested in helping you.

You will be an important part of a team who wants you to get the best out of your internship and will take the time to help you and discuss your ideas. You can also explore other subjects and opportunities through a personal mentor, hackathons and more.

Our interns have the opportunity to make significant contributions to work that could go on to impact Microsoft products. Our mission is to empower every person and every organization on the planet to achieve more, and you can be part of that.

We offer a competitive salary, an accommodation allowance and number of events and activities during the summer to enable you to get to know others.

**Duration:** July-October

We are seeking for top-notch summer interns who are passionate about both cybersecurity and cloud technologies, and interested in expanding their knowledge of advanced cybersecurity, through large-scale data research, identifying and protecting against attacks in a world's leading cloud environment.

We are building cutting edge hybrid data center protection product that gives customers visibility and control without impeding agility and helps them stay ahead of cyber threats as they evolve. You will join the group that is responsible for advanced threat detection. Using a platform that harness machine learning, behavioral profiling, and advanced security analytics, you will work to detect emerging threats and advanced attacks to defend millions of cloud-resources.

If you are obsessed about solving complex problems, interested in fighting cybercrime and developing state of the art security solutions - come join us and protect billions of users all around the world.
Requirements:

- Excellence Student for PHD degree in Computer Science or a related technical discipline.
- Understanding of common security attacks and ability to apply defensive tactics to defend against them.
- Experience with network security and expert knowledge in the cyber analysis - Advantage.
- Experience working with network data, event data, or other large datasets - Advantage.
- Machine learning knowledge – Advantage.
- Azure, AWS or other cloud environments experience – Advantage.
- “Red Team” / “Blue Team” experience – Advantage.


Our last research articles:


Contact details: Security Research Software Engineer Summer internship- PHD in Herzliya, Tel Aviv, Israel | Engineering at Microsoft
Yahoo

Largely to be determined in a dialog with the intern, within the scope of Ad tech/NLP/distributed systems/User modeling/mail

Job description: 3 month research work, hopefully culminating in a publication.

Requirements: Pass a day of interviews

Contact details: Omri Perek omrip@verizonmedia.com
PTC

Static Analysis using clang compiler

Job description: Modifying the clang compiler & clang-tidy tool to check for specific programming issues in a very large C/C++ codebase

Requirements:

- Good Software development skills.
- Experience with C/C++ - MUST

Contact details: Asaf Amit, aamit@ptc.com
Toga Networks (Huawei)

Data-Driven Systems: Semantic Fusion of Multiple Streams of the same Spatio-Temporal Scene

Job description: We have built a system that uses an ad-hoc pipeline of ML engines that process the same video sequence. Sometimes multiple engines provide similar functionality (Google [5], AWS [6] services) and sometimes they add specific functionality (Step [1], Scene Graph Benchmark [2]). In all cases, a crucial step of “Fusion” is required in order to integrate the contribution of each engine in the pipeline. The Fusion typically relies on the fact that the timeline (represented by timestamps or frame numbers) and the space (represented by bounding boxes) domains are identical for all engines. Semantic integration is used to equate labels that refer to the same entity. Can this scheme be generalized? This is mainly a SW engineering problem as well as a research problem. The SW engineering problem has to do with design of robust and generic APIs for the Engines, Pipeline and Fusion. The research problem has to do with the fact that intuitively, we would like to synthesize the boiler plate code of the Fusion. Moreover, I think we can automate the choice of the specific Fusion scheme based on automated search of specific search space that represents all the engine combinations (similarly to what is done with DNN architectures in NAS). Another alternative is to optimize the composition of the Fusion steps (namely, the classification, detection, tracking engines) based on some optimality metric (similarly to what is done with SQL query optimization).

[2] Scene Graph Benchmark https://github.com/KaihuaTang/Scene-Graph-Benchmark.pytorch

Requirements:
- Video processing using SotA Classification, Detection and Tracking DNN engines
- Semantic integration
- Knowledge Graphs

Contact details: Eliezer Levy eliezer.levy@huawei.com 0542277128
Toga Networks (Huawei)

Indoor navigation using smartphones

Job description: Deep Learning Expert to join our growing AR/VR research team. As Deep Learning Expert You will design, research and develop Deep Learning solutions for Activity Recognition (AR), Pedestrian Dead Reckoning (PDR) and other navigation algorithms based on multi-sensor fusion for AR/VR applications including navigation and localization.

Requirements: Python experience and deep learning skills

Contact details: Itzik.klein@huawei.com
Rafael – Advanced Defense Systems

Research intern

Job description: NEWCIRC (SAMLA – in Hebrew) is one of the largest national research labs in Israel. We research and develop a broad range of technologies to meet critical national security needs. NEWCIRC is at the forefront of many of Israel’s national security-related research efforts. Our researchers have exceptional technical abilities and creativity, working in cross-disciplinary teams that tackle hard research challenges.

Our focus spans over these main research areas:
- Cyber
- Signal processing algorithms
- Machine learning
- Electro-optics
- Satellite navigation
- Communications
- RF systems
- Navigation, control and estimation theory

NEWCIRC is offering research internship positions in all of the above research areas tackling diverse challenges. You will have the opportunity of work side-by-side with senior researchers. We can shape your research tasks here at NEWCIRC to align with your PhD/MSc research.

Have an idea for a research internship project that may be of relevance to national security? Try us out – we might just say yes.

Requirements:
- PhD or MSc student in the above research fields.
- Passion to tackle extremely hard research challenges
- Suitable candidates will be asked to undergo a security clearance

Location: All research positions are at David Campus, Haifa area. Cyber research positions are also available at Tel-Aviv (Ha’Arba st.) and Be’er Sheva (Gev-yam park).

Contact details: sharonmr@rafael.co.il
Medtronic

Deep learning and computer vision engineer

Job description: At Medtronic, we believe in the power of medical technology to improve lives. As an intern in the Visualization group, you will join an interdisciplinary team focusing on novel imaging-based applications for surgeries. You will work with us on cutting-edge AI technology, revolutionizing the way healthcare is delivered.

What will you do:
Hands-on development of AI-based video-analytics algorithms for medical applications, including classification and segmentation of objects, scene understanding and integration of AI applications in a real-time imaging pipeline.

Required education and skills:
1. Studying towards an MSc or a PhD degree in Computer Science, Electrical Engineering or similar at a known university (GPA>90). Excellent 4th year undergraduate students may apply as well.
2. Experience in deep learning and computer vision.
3. Experience in Python programming.
4. Experience in PyTorch or TensorFlow.

Nice to have:
1. Research related to deep learning/computer vision/image processing.
2. Experience in deep-learning networks with memory (RNN/LSTM).
3. Experience in medical imaging.
4. Experience in NVIDIA GPU programming.

Location: Petah Tikva/Yokneam/Home (flexible)
Duration: 3 months (part time, possibility for extension)
Contact details: rami.cohen@medtronic.com