

Summer Internships 2018 MSC&PHD Students

Company	project
Palantir	Forward Deployed Software Engineer
Intel	AI Innovation- summer internship
Microsoft	Data Science Summer Internship at Microsoft- Windows Cyber Defense
Marvell	Customer Solutions researcher
Marvell	Traffic Analytics and Network Telemetry
Mellanox	Optical Data Centers Novel Traffic Scheduling
Mellanox	Host Based Admission Control Transforming Multi Level Slimmed Fat Trees into a Virtual Single Switch
Mellanox	Large Scale Telemetry
Mellanox	Device Level Congestion Control
Mellanox	Network Sensitive Job Scheduling
Apple	Implementation and research of digital linearization techniques of radio frequency (RF) power amplifier (PA).
Apple	Implementation and research of machine learning algorithms to wireless physical layer.
Apple	Color and Depth Image Fusion
Apple	Adding 3D point cloud manipulation for data augmentation (for network training)
Apple	Anomaly detection algorithm implementation
Apple	Machine learning intern
Apple	Deep learning research internship
Apple	Functional Formal Verification and Specification of Hardware Design
Elbit	3D vision team
Elbit	Artificial Intelligence Team

TSG

[Strategic C2 Systems Department - Research associate](#)

Palantir

Forward Deployed Software Engineer

Company: Palantir

Position (title of the project): Forward Deployed Software Engineer

Job Description:

Forward Deployed Software Engineers (FDSEs) understand our customers' greatest pain points and design end-to-end solutions to address them. FDSEs solicit constant feedback on their work from both customers and colleagues, improving our products over time with rapid iteration cycles.

FDSEs deploy ground breaking technical solutions to solve our customers' hardest problems. Projects often start with a nebulous question like "Why are we losing customers?" or "How can we more effectively identify instances of money laundering?" FDSEs lead the way in developing a solution, from high-level system design and prototyping to application development and data integration. As an FDSE, you leverage everything around you: Palantir products, [open source technologies\[palantir.github.io\]](https://github.com/palantir), and anything you and your team can build to drive real impact.

You work with customers around the globe, where you gain rare insight into the world's most important industries and institutions. We help our customers detect insider trading, improve disaster relief, fight healthcare fraud, and more. Each mission presents different challenges, from the regulatory environment to the nature of the data to the user population. You will work to accommodate all aspects of an environment to drive real technical outcomes for our customers.

Technologies we use

- Core Palantir products provide the foundations for our deployments.
- Custom applications built on top of core Palantir platforms.
- Postgres, Cassandra, Hadoop, and Spark for distributed data storage and parallel computing.
- Java and Groovy for our back-end applications and data integration tools.
- Typescript, React, Leaflet, and d3 for our web technologies.
- Python for data processing and analysis.
- Palantir cloud infrastructure based on AWS EC2 and S3.

Requirements:

- Strong engineering background, preferred in fields such as Computer Science, Mathematics, Software Engineering, Physics.
- Familiarity with data structures, storage systems, cloud infrastructure, front-end frameworks, and other technical tools.

- Understanding of how technical decisions impact the user of what you're building.
- Proficiency with programming languages such as Java, C++, Python, JavaScript, or similar languages.
- Ability to work effectively in teams of technical and non-technical individuals.
- Skill and comfort working in a rapidly changing environment with dynamic objectives and iteration with users.
- Demonstrated ability to continuously learn, work independently, and make decisions with minimal supervision.
- Willingness and interest to travel as needed.
- Technical work experience

Students (undergraduates or MSc/PhD students): Undergraduate and Masters students who are the year before their final year, willing to accept an offer for when they graduate

Contact Details: Israel@palantir.com ☑ only English CV's will be processed. Please only apply if you have technical experience in a professional setting ***student job or internship***.

Intel

AI Innovation- summer internship

Company: Intel

Position (title of the project): AI Innovation- summer internship

Job Description: Advanced Analytics is a cutting edge group that globally leads Intel's machine learning solutions is seeking an outstanding student in the fields of machine learning/deep-learning for a summer internship. As a part of our diverse and dynamic group, you will use the latest cutting-edge methods in data science across various domains, data types and learning tasks. You will be part of a team developing innovative and high-impact AI solutions.

Requirements:

- MSc/PhD students
- Exceptional MSc/PhD student focusing on machine learning/deep-learning advantage for PhD students
- Strong knowledge and significant experience in data science machine learning/deep-learning.
- Substantial experience in programming, including Python/R/Matlab.
- Highly motivated, methodical, innovation-oriented, communicative and a self-starter

Contact Details: <http://career.intel.com/jlKK8>

Microsoft

Data Science Summer Internship at Microsoft- Windows Cyber Defense

Company: Microsoft

Position (title of the project): Data Science Summer Internship at Microsoft- Windows Cyber Defense

Job Description:

ENDLESS DATA: Peta-bytes of real-world security data from thousands of end-points to analyze.

REAL-WORLD DATA SCIENCE: Join forces with our applied researches for a 3 months data science project.

YOUR OWN "BUDDY" Work side by side with a Microsoft's engineer, which will mentor and guide you through the summer.

GET A FEEL FOR HOW IT'S LIKE Apply your skills and show your knowledge in a fully productized environment, getting a feel for how it's like to develop for the world.

Are you interested in radically improving the security of Microsoft's products? Do you want to work on the Intelligent Security Graph and new security products? Windows Defender Advanced Threat Protection (WDATP) is an exciting new product that helps enterprise organizations detect, investigate, and respond to advanced and targeted attacks on their networks.

We are searching for strong self-driven students in their Ph.D. or second year of MA, experienced with Data Science, for a unique and exclusive summer internship with us **on** the WDATP Research Team.

Our team has a deep understanding of the techniques attackers use to infiltrate enterprise networks and powers the detections behind the WDATP product.

Our research lab innovates in new approaches for detecting these techniques and works with Windows teams to source the needed signals.

If you are a passionate and technically strong data scientist and want to spend this summer doing something unique – apply today for our summer internship.

Requirements:

- BA in Computer Science, Mathematics or Engineering
- 2nd year in MA (or at any stage of a Ph.D.), in the field of Data Science or Machine Learning

Apply for this position:

<https://microsoft.recsolu.com/external/requisitions/NgstE8PMKogCiPbWXGg45Q>

Marvell

Customer Solutions researcher

Company: Marvell Israel

Position (title of the project): Customer Solutions researcher

Job Description: Analyze different embedded processor products, identify key advantages and weakness, run benchmarks to investigate the systems performance, Participate in “tear down” of embedded processors boxes to study their design and create a detailed report on each system.

Ramping up applications and build CPU centric and networking demos on top of embedded processors community boards, can also include editing movies to be posted on YouTube.

Requirements: Computer Science \ Electrical Engineering (can be undergraduates over 3 years)

Students (undergraduates or MSc/PhD students): undergraduates over 3 years of study and MSc/PhD students

Contact Details: Arik Kit, akit@marvell.com, +972-54-7717310

Marvell

Traffic Analytics and Network Telemetry

Company: Marvell

Position (title of the project): Traffic Analytics and Network Telemetry

Job Description: The summer internship is for a focused project in the area of Network Telemetry. Network telemetry and traffic analytics is a hot topic in Computer Communication. The project will include developing a traffic analytic software for Marvell’s advanced Ethernet Switches, and exporting the results to a telemetry agent. The software will run in Linux user-space as part of Marvell’s

software offering. This internship in Marvell Semiconductor, offers a unique opportunity to work and learn from leading Software Engineers and Architects in a successful and growing company.

Requirements: Software / Computer Engineer student, with interest in Computer Communication and experience with Linux operating systems (must) and embedded programming (highly desired). Highly skilled, independent and motivated student. Excellent knowledge in C language programming.

Students (undergraduates or MSc/PhD students): Undergraduates in Computer Sciences. Full Time for 3 month. Location: Petach Tikva

Contact Details:

Gidi Navon gidin@marvell.com

Vitaly Vovnoboy vitalyv@marvell.com

MELLANOX

Optical Data Centers Novel Traffic Scheduling

With the ever increasing requirements for Data Center Bandwidth, research of Optical Data Centers Networks (ODCNs) has become one of the most acute challenges of the networks industry and academia. Amongst the most challenging problems in this field is scheduling of optical circuits.

The aim of this internship is to suggest and evaluate new schemes for ODCN circuits scheduling and their use. Several novel ideas we have been internally suggested but require next level of details, modeling and evaluations. Moreover, new approaches are also highly looked-for.

Successful internship will result in providing innovation for future products, writing academic paper and/or patent.

Required Skills: C++ programming, Networks course 1, Data Models, Algorithms,

Advantages: Experience in research, knowledge in Optical Data Centers.

Full time job during 3 months of summer 2018

Contact: eitan@mellanox.com

MELLANOX

Host Based Admission Control Transforming Multi Level Slimmed Fat Trees into a Virtual Single Switch

Cell based switching systems claim of fame is to provide a crossbar like behavior for a system built with discrete NICs and switch elements. It was successfully demonstrated for the case of over provisioned 2 level fat-trees that indeed it is possible to maintain crossbar behavior in the cost of additional latency and buffers at the NICs.

The aim of this internship is to extend the idea of “distributed crossbar” and apply it to an arbitrary number of levels, packet switched, and under provisioned fat-trees. We would like to suggest a novel NIC based algorithm that is capable to provide the maximal performance for this system. The work should provide theoretical bounds, algorithms, limitations and evaluation of the proposed ideas.

Successful internship will result in providing innovation for future products, writing academic paper and/or patent.

Required Skills: C++ programming, Networks course 1, Data Models, Algorithms,

Advantages: Experience in research, deep understanding of TCP Congestion Control

Full time job during 3 months of summer 2018

Contact: eitan@mellanox.com

MELLANOX

Large Scale Telemetry

The need to perform monitoring of large systems to provide real time alerting for various faults and performance degradation events is well recognized in both the HPC and the Hyperscale data centers environments. Mellanox devices provide unique features that directly support that need.

During this internship you will build a large scale simulation environment that mimic the Mellanox devices behavior, configure them and show the scalability of the monitoring system. A secondary effort that is also being considered is the implementation of the control mechanisms and the software involved in activating these features in the devices.

Successful internship focused on simulation will result in performing large scale simulations of the monitoring system under load, and writing academic paper and/or patent. Focusing on the device mechanisms will allow the intern to learn about the monitoring capabilities, the configuration protocols and the software involved.

Required Skills: C/C++ programming, Data Models, Algorithms,

Advantages: Fast learning and enthusiasm about new technologies.

Full time job during 3 months of summer 2018

Contact: eitan@mellanox.com

MELLANOX

Device Level Congestion Control

During the last few years, the need for Hyperscale Data Center new Congestion Control algorithms has caught the attention of many of the networking researches. However, with the rise in network bandwidth, and consequently the exponential increase of packet rate, programming these algorithms in the host memory becomes too slow. In HotNet 2017 conference several papers discuss the need to smarter combination of hardware and

software to keep up with the above challenge. Mellanox devices have kept up with this challenge by providing programmable congestion control scheme.

In this internship you will learn about that exciting new technology, program and evaluate (by simulation and measurement) several known congestion control algorithms. The key learnings of that study will influence the next generation Mellanox hardware, and possibly be published as a paper in coming Networking workshop or conference.

Required Skills: C++ programming, Networks course 1, Data Models, Algorithms,

Advantages: Experience in research, deep understanding of TCP Congestion Control

Full time job during 3 months of summer 2018

Contact: eitan@mellanox.com

MELLANOX

Network Sensitive Job Scheduling

As the importance of parallel applications keeps rising, so grows the demand of intra data center bandwidth. Consequently Network aware Jobs Scheduling algorithms are gaining more and more attention. In Mellanox we have developed several scheduling algorithms to deal with Job Isolation for runtime predictability and also for being able to guarantee of network resources.

In this internship you will implement extensions to the Mellanox algorithms, simulate their use on real large clusters and evaluate their effectiveness. A successful completion of the internship should lead to a publication material to be published in relevant conference or workshop.

Required Skills: C++ programming, Networks course 1, Data Models, Algorithms,

Advantages: Experience in research, Understanding Job Scheduling concepts

Full time job during 3 months of summer 2018

Contact: eitan@mellanox.com

Apple

Implementation and research of digital linearization techniques of radio frequency (RF) power amplifier (PA).

Company: Apple

Project: Implementation and research of digital linearization techniques of radio frequency (RF) power amplifier (PA).

Job Description: The RF PA is one of the most critical components in designing transmitters in wireless communication systems. The power consumption of transmitters is dominated by the power efficiency of the PA. Together with continuous demand for wider bandwidth and higher modulation schemes it requires PA with good linearity and power efficiency. The state of the art approach to meet these contradictory requirements is the design of a moderately linear PA with the additional implementation of a digital linearization techniques.

The student will research digital linearization techniques of RF PA, implement the algorithm in Matlab and validate the performance of the algorithm in the lab.

Requirements:

- Knowledge in communication or digital signal processing
- Knowledge and experience with Matlab or C/C++ programming
- Background in analysis of non-linear systems – an advantage
- Familiar with RF/HW lab work – an advantage
- Independent and self-motivated
- PhD or Master level student in EE or CS

Apply here: <https://applecorp.avature.net/InternshipsIsrael>

Contact Details for any questions: Elin Hochstadt ehochstadt@apple.com

Apple

Implementation and research of machine learning algorithms to wireless physical layer.

Job Description: Machine learning has been recently applied for many fields, such as computer vision and natural language processing, due to its expressive capacity and convenient optimization capability.

The student will research the applicability of machine learning algorithm for a wireless physical layer, implement the algorithm in Python/C++ and compare the performance of the algorithm to conventional communication system approach.

Requirements:

- Good analytical skills, self-learning capabilities
- Good programming skills (Python, C++)

- Knowledge in machine learning – mandatory
- Background in digital communication – an advantage
- PhD or Master level student in EE or CS

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Contact Details for any questions: Elin Hochstadt ehochstadt@apple.com

Apple

Color and Depth Image Fusion

Job Description: We will implement and analyze state of the art techniques for fusing color and depth images to produce a single high resolution RGBD model. The depth and color images differ in spatial and temporal resolution. During the internship period, the student will study selected solution approaches, implement a computationally efficient processing environment, develop metrics for performance evaluation, and test the solutions on real imaging sensors.

Requirements:

- Experience DNN/CNN frameworks for vision and image processing.
- Hands on experience with Tensorflow.
- PhD or Master level student in EE or CS with a research topic in a relevant field.

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Contact Details for any questions: Elin Hochstadt ehochstadt@apple.com

Apple

Adding 3D point cloud manipulation for data augmentation (for network training)

Job Description: When dealing with DNN based detectors, data augmentation is a powerful tool for enhancing your data. For depth images, augmentation in the 3D space (point cloud) is a logical thing to do. The student will learn to deal with depth images and their representations and would implement data augmentation using python and TFRecords. He would then test the network performance and accuracy with and without these augmentations.

Requirements:

- Good analytical skills, self-learning capabilities
- Good programming skills (Python, Matlab, C++)
- Background in computer vision – an advantage
- Background in machine learning and DNN/CNN – an advantage
- PhD or Master level student in CS, EE or IS

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Apple

Anomaly detection algorithm implementation

Job Description: Anomaly detection algorithms are non-supervised learning algorithms that detect abnormal or unexpected behavior of systems. The student will learn an anomaly detection algorithm from a journal paper, implement it in Python/C++, and test its performance compared to other algorithms.

Requirements:

- Good analytical skills, self-learning capabilities
- Good programming skills (Python, C++)
- Background in machine learning/anomaly detection – an advantage
- PhD or Master level student in EE or CS or IS

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Apple

Machine learning intern

Job Description: Turi Israel is working alongside the iPhone manufacturing Data Science team, in analyzing and improving manufacturing pipelines and processes. In this internship, you will work on massive datasets generated during the iPhone manufacturing process. You will research and experiment with state of the art statistical and algorithmic tools and apply them to this data, reach meaningful and actionable conclusions, and communicate your findings using advanced visualization techniques.

Requirements:

- Excellent analytical skills.
- Knowledge of supervised and unsupervised machine learning methods.
- Good programming skills (Python - an advantage).
- Background in anomaly detection – an advantage.
- PhD or Master level student in CS, IS, Statistics or Industrial Engineering.

About The Turi Team: Turi is the core machine learning group at Apple. We generate tools for data scientists within and outside Apple. Some of our open source tools: [Turi Create](#), [CoreML](#), [SFrame](#). Turi is headed by Prof. Carlos Guestrin from University

of Washington, we have more than 15 PhDs specializing in distributed systems, machine learning and statistics.

Apply here: <https://applecorp.avature.net/InternshipsIsrael>

Contact Details for any questions: Elin Hochstadt ehochstadt@apple.com

Apple

Deep learning research internship

Project: Deep learning research internship: cutting edge deep learning computer vision project for the Implementation and research of high noise low signal cosmetic anomalies detection and localization in images of Apple products during the manufacturing process.

Job Description: The cosmetic requirement of apple products is very strict and even very small anomalies are unacceptable. This poses a great challenge to detect these minute variations in the image.

The student will research various deep learning method for detection of anomalies in images (supervised and unsupervised). Implement the algorithm in python and validate using real manufacturing data.

Requirements:

- PhD or Master level student in EE or CS
- Knowledge in python
- Knowledge and experience with deep learning vision algorithms and frameworks like TensorFlow, MxNet, PyTorch etc.
- Independent and self-motivated

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Apply here: <https://applecorp.avature.net/InternshipIsrael>

Contact Details for any questions: Elin Hochstadt ehochstadt@apple.com

Apple

Functional Formal Verification and Specification of Hardware Design

Job Description: Apply state of the art tools and techniques to verify the logical correctness of Apple hardware units. Explore and study areas such as: formal verification planning, advanced techniques in bug hunting, formal verification coverage and the integration of formal techniques with the more classical approaches of dynamic simulation. Suggest enhancements to existing flows and use models to prove their concepts.

Requirements: Ph.D. Student in CS with focus in the area of formal verification

Apply here: <https://applecorp.avature.net/InternshipIsrael>

Contact Details for any questions: Elin Hochstadt ehochstadt@apple.com

Elbit

3D vision team

Company: Elbit System LTD, Aerospace Division, Artificial Intelligence and Computer Vision Group

Location: Matam, Haifa, Israel

Position (title of the project): 3D vision team

Job Description: The 3D vision team is responsive for 3D reconstruction and modelling activities within a variety of projects in the division as well as image based navigation. We develop algorithms to process Lidar point clouds, reconstruction structure from motion, process 3D data to generate photorealistic meshes and more. Most of the development in the group is utilizes Matlab or python. We are looking for a researcher in the field of computer vision or graphics to conduct research in the field of 3D objects classification and modelling from Lidar point clouds.

Requirements:

- Msc. or PhD student for computer vision or computer graphics
- Proven research abilities
- Ability to analyze quickly complex goals and develop state-of-the-art methods.

Contact Details: Hadas.Kogan@elbitsystems.com

Elbit

Artificial Intelligence Team

Company: Elbit System LTD, Aerospace Division, Artificial Intelligence and Computer Vision Group

Position: Artificial Intelligence Team

Location: Matam, Haifa, Israel

Job Description: The AI team is developing state of the art algorithms in the field of machine learning and reinforcement learning. We develop algorithms of decision making for

autonomous systems, insight extraction from images, time series models and big data. Most of the development in the group utilizes Python on Linux. We are looking for a researcher in the field of reinforcement learning to conduct research in the field of autonomous decision making or machine learning and computer vision for image analytics.

Requirements:

- Msc. or PhD student for computer vision or machine learning
- Proven research abilities
- Ability to analyze quickly complex goals and develop state-of-the-art methods.

Contact Details: yonah.coscas@elbitsystems.com

TSG Advanced Systems Ltd

Strategic C2 Systems Department - Research associate

Company: TSG Advanced Systems Ltd.

Position: Strategic C2 Systems Department - Research associate

Job description: As a research associate, you will plan, organize, and conduct research upon approval of the principal investigator. You will design, test, and evaluate methods and protocols for research in the field of machine learning in the electronic warfare domain; you will also analyze, summarize, and organize collected data together with principal investigator.

Applicable research products will be candidates for future deliveries of a unique strategic C2 EW system developed for unique customers.

Required skills:

1. Eager to learn and passionate about new technologies.
2. Knowledge in RF.
3. Knowledge in Sensors – very high rate raw physical layer signals.
4. Knowledge in Machine Learning and Specifically in Neural Nets Models: Supervised and Unsupervised, RNN, LSTM, ConvNets, Prediction and Anomaly detection.
5. MSc/PhD students

Contact details: Gilad Sharoni Gilad.Sharoni@tsgitsystems.com