Teaching CS Workshop
The Academic College of Tel-Aviv-Yaffo
Oct 16, 2025

The workshop welcomes teachers, lecturers, and practitioners interested in CS education.
It aims to share insights, materials, and challenges in teaching computer science, including new opportunities and challenges emerging in the AI era.

Click for Registration

8:30 - 9:15 Gathering + Refreshments

9:15 - 9:30 Opening Words

9:30 - 9:55 (25 minutes)

Iris Gaber: Innovative Teaching Method to CS1

In this talk I will present a course I designed that combines the Python programming language with algorithmic content, replacing a previous CS1 course that was based on the C language.
One of the innovative additions in this course is the use of mandatory accompanying videos, which reduce weekly lecture hours and include a variety of questions, from multiple choice to programming tasks. This change has already been implemented and received very positive feedback from students, who appreciated the clarity and usefulness of the videos.
I will also discuss the challenges of simple programming homework in today's era of GenAI tools and how we aim to address this issue.

Dr. Iris Gaber is a senior lecturer at the Academic College of Tel-Aviv Yaffo. She has been teaching a wide range of courses since 1996, including practical programming courses such as Python, C, and C++, and theoretical courses such as Data Structures and Algorithms. Her recent research focuses on computer science education, with an emphasis on improving course materials, assessments, and instructional approaches to enhance the teaching of CS.

9:55 - 10:40 (45 minutes)

Yael Erez and Amir Rubinstein:
Teaching Computer Science in the GenAI Era: Journey Logs

The rapid rise of generative AI tools, especially in software development, is reshaping the knowledge and skills needed in computer science education.
In this talk we would like to share insights from a year of experience in two foundational courses: Introduction to Computer Science at the Technion and Data Structures at Tel Aviv University. Through examples of classroom experiments and the perspectives of both instructors and students, we explore the challenges and opportunities of teaching with Large Language Models.
Rather than offering final answers, we invite discussion on what and how to teach computer science in the age of AI.

Yael Erez is a lecturer at the Technion's Faculty of Computer Science and a faculty member at the Department of Electrical Engineering at the Braude College of Engineering in Karmiel, Israel. She is currently a doctoral student at the Technion's Department of Education in Science and Technology, under the supervision of Prof. Orit Hazzan.

Prof. Amir Rubinstein is a teaching faculty at the School of Computer Science and AI at Tel Aviv University. He devotes most of his time to teaching a variety of CS courses, to designing, developing, and improving CS education, and to sharing the beauty of computer science with broader audiences.

10:40 - 11:00 Break

11:00 - 11:15 (15 minutes)

Assaf Spanier: Reprogramming Programming Education in the AI Era:
Flipping Bloom's Pyramid and Discussing the Junior Crisis

The GenAI era is reshaping programming education and bringing new challenges, including the junior crisis. This talk explores redesigning it from the ground up and highlights three paradigm shifts:

1. Flipping Bloom's Pyramid: AI allows creation early, so teaching should focus on analysis, debugging, testing, and understanding existing code.
2. From Product to Process: Reduce basic homework and emphasize hands-on, supervised projects and open-source participation.
3. Teaching Skepticism: Students must understand AI limitations and learn core programming fundamentals manually.

We will discuss how these shifts can prepare the next generation of programmers for an AI-driven world.

Dr. Assaf Spanier is the head of the Master's Program in Software Engineering with a specialization in Artificial Intelligence at Azrieli College of Engineering in Jerusalem, where he also serves as a senior lecturer in the Department of Software Engineering and Computer Science. In addition to his academic role, Dr. Spanier hosts the podcast "Reprogramming Programming Education in the AI Era," which aims to spark discussion about the changes needed in training future programmers and the current challenges in software education.

11:15 - 11:40 (25 minutes)

Keren Kalif:
From Lecture to Interaction: How Flipping the Classroom Boosted My Students

In this talk, I'll share my experience transforming a traditional C++ Object-Oriented Programming course into a flipped classroom experiment. Instead of classic lectures, students engaged with short videos, weekly quizzes, hands-on exercises, and a live project that challenged them from day one. Along the way, I confronted common fears, would students resist, would performance drop, and discovered surprising improvements in motivation, participation, and grades.

Keren Kalif is a senior faculty member at Afeka College of Engineering and an expert in teaching programming. She has developed official digital courses for Campus IL and the Israeli Ministry of Education, and regularly trains both students and professionals in C++, Python, and Java. Beyond her academic work, Keren specializes in designing innovative learning experiences: combining pedagogy, technology, and creativity to make complex programming concepts accessible and engaging. She also coaches educators on effective teaching methods and presentation skills, helping them transform their classrooms into dynamic spaces for learning and collaboration.

11:40 - 11:45 Short Break

11:45 - 12:10 (25 minutes)

Michal Merkin:
Presenting Computer Science utilizing a Multidisciplinary and Interdisciplinary Approach

> Computer science studies traditionally focus on theory, software, and hardware, with courses taught separately to provide in-depth training. The aforementioned application was within the realm of a multidisciplinary environment. In recent years, I developed a lab course in game development for students from multiple departments, including computer science, industrial design, and music. The course challenged students to collaborate and combine their diverse skills to create an original computer game. They gained experience in interdisciplinary teamwork and developed new abilities such as coordination, communication, openness, and patience. Student feedback indicated that the course better prepared them for their future careers.

Dr. Michal Merkin holds an M.Sc. in Mathematics and a Ph.D. in Computer Science, specializing in CAD/CAM, both from the Hebrew University of Jerusalem. She is a lecturer in the Department of Computer Science at the Jerusalem Multidisciplinary College (JMC) and works in the fields of visualization and programming. In recent years, she has focused on developing, teaching, and conducting research in game development.

12:10 - 12:25 (15 minutes)

Nathanel Ozeri Green: From University to Production: Bridging the Gaps for B.Sc. Grads Entering the Job Market - A Case Study

> Transitioning from academic studies to real-world software production often reveals significant gaps in skills, practices, and expectations. This talk explores the challenges graduates face when moving from university projects to production environments, including the additional challenges introduced by AI.
> We will discuss strategies for bridging these gaps and present AT&T's Technology Development Program (TDP) as a case study, showing how it prepares new engineers to succeed in a real-world production environment.

Nathanel Ozeri Green holds degrees in Computer Science and Electrical Engineering from Tel Aviv University. He is the CEO and Co-founder of Alphapulse, a medical device startup, and was previously Co-founder and CTO of Darebiz AI (acquired). With over a decade of experience as a software engineer and team leader across various companies, he has taught theoretical and practical software topics and is occasionally involved in industry training projects.

12:25 - 12:30 Short Break

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Yogev Shani: Sharing Practical Approaches to AI Usage for Students

> This talk presents a mandatory introduction course to AI designed for CS students, focusing on proper and responsible use of AI technologies. The course covers practical usage and strategies to enhance learning while avoiding misuse, helping students gain foundational skills in AI from day one.
> In addition, we describe the integration of AI as a tool within Moodle, enabling teachers to apply AI directly in their coursework. Both innovations are planned for implementation at the Academic College of Tel-Aviv-Yaffo CS school starting this year.

Yogev Shani is a lecturer in Computer Science at the Academic College of Tel-Aviv-Yaffo, where he teaches C++, Java, Python, AWS Cloud, and Generative AI. He leads the new specialization in Software Engineering with AI-based Software and drives academic–industry collaborations, including an upcoming internship program in high-tech companies. He also develops AI-based learning assistants to support students in coding, cloud technologies, and self-directed learning. His research and teaching focus on integrating Generative AI into education to better prepare students for future industry challenges.

12:50 - 14:00 **Lunch + Mingling**

Registration link (required).

Please secure your registration **no later than October 8, 2025**.

For any questions or inquiries, please contact Amir Kirsh: amirk@mta.ac.il

Looking forward to seeing you at the workshop!