

Announcement for Artificial Intelligence (AI) (Machine Learning/Deep Learning) Teaching Specialists

Position: AI Teaching Specialists (Supervisors)
Location: RA Public High Schools (Various Locations)
Teaching methodology: Hybrid (primarily online)
Teaching hours: about 5 academic and 1 mentor/office hour/week
Teaching start: September 2024

The Foundation for Armenian Science and Technology (FAST) has launched the [Generation AI High School Project](#) with a vision to empower and motivate high school students to pursue careers as AI researchers and innovators. Through this initiative, we aim to provide students with essential math and computer science skills, with a specific focus on Python programming and AI, and foster their passion for AI research and innovation.

The curriculum is structured into three levels: Machine Learning, Deep Learning, and practical application through project implementation. In your role as an AI Teaching Specialist, you will have a crucial impact on this innovative initiative by piloting and improving the curriculum and as a result the teaching and learning process. Working closely with the school computer science teacher, your responsibilities will include crafting effective teaching approaches and presenting compelling lessons on Machine Learning and Deep Learning to 11th-grade students utilizing our curriculum, learning materials and platform. Your mentorship and guidance will empower students to explore practical applications of Machine Learning, Deep Learning, and AI Ethics.

Main Responsibilities and Qualifications of the AI Specialist:

Topics to be taught:

Machine Learning Course	Deep Learning Course
<p>Start Date: September 2024 Duration: 4 months Teaching hours: 49 academic hours Format: Hybrid (primarily online)</p>	<p>Start Date: January 2025 Duration: 6 months Teaching Hours: 53 academic hours Format: Hybrid (primarily online)</p>
<ol style="list-style-type: none"> 1. Introduction to AI 2. Perception 3. Learning 4. ML components: data 5. ML methods: decision trees 6. ML methods: linear and logistic regression 7. ML components: evaluation 8. Scikit-learn predictors 9. Bias and variance tradeoff; regularization; curse of dimensionality Bias and variance tradeoff; 	<ol style="list-style-type: none"> 1. Introduction to neural networks 2. Back-propagation 3. Neural network training in practice 4. Convolutional neural networks 5. Unsupervised learning 6. Natural language processing 7. Sequence modeling (RNNs and Transformers) 8. NLP applications 9. Bias in neural networks 10. A discussion on: What legal problems can arise from AI usage; AI and misinformation. Fake news, DeepFakes,



<p>regularization; curse of dimensionality</p> <p>10. A discussion on: The problem of consciousness; Ethical concerns; Safety concerns</p>	<p>mimicking voices, etc.; How can AI help to counter misinformation; AI and art. Distinctions between human art and machine-generated art. The problem of copyrighting; High accuracy vs high interpretability. Examples from healthcare</p> <ol style="list-style-type: none"> 11. Speech recognition 12. Other generative AI examples 13. Transfer Learning 14. Out of distribution generalization 15. Reinforcement learning 16. A discussion on: How will AI shape future economies; How can AI impact your community; How will AI affect education; What jobs are going to disappear because of AI and what new jobs are going to be created
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Responsibilities:

Machine Learning Course

- In collaboration with the school computer science teacher, deliver engaging and interactive Machine Learning and/or Deep Learning lessons (approximately 5 academic and 1 mentor/office hour per week) to 11th-grade students using FAST's curriculum, platform, and learning materials.
- Provide guidance and mentorship to students, enabling them to explore real-world and practical applications of Machine Learning and/or Deep Learning.
- Participate in the pedagogical and curriculum related training and mentorship program organized by FAST to ensure effective curriculum delivery.
- Collaborate with the school computer science teacher to design and develop appropriate teaching methodology, including lesson plans, assignments, and projects.
- Cultivate a supportive and inclusive learning environment that encourages student participation and collaboration.
- Coordinate and facilitate students' involvement in exams and extracurricular activities.
- Actively engage in the "Generation AI" program community to support its development and foster growth.
- Collaborate with the FAST team and experts, providing feedback and reports on student achievements and curriculum/resource improvements.

Requirements

Machine Learning Course

- Strong understanding of basic machine learning concepts and algorithms.
- Proficiency in Python and basic object-oriented programming in Python.
- Good knowledge of NumPy, Scikit Learn, and Matplotlib libraries. Familiarity with Pandas is an advantage.
- Familiarity with Google Colab or Jupyter notebooks.

- Ability to use educational tools and platforms in order to facilitate the teaching of machine learning concepts (e.g., conducting demos).
- Flexibility and adaptability to adjust teaching methods based on students' needs and the evolving field of machine learning.

Deep Learning Course

- Strong understanding of basic machine learning and fundamentals of neural networks. Experience of working with various neural network architectures, such as multilayer perceptrons, convolutional networks, recurrent networks, transformers.
- Familiarity with basics of natural language processing and language modeling.
- Proficiency in Python and basic object-oriented programming in Python. Good knowledge of Pytorch, NumPy, Scikit Learn, and Matplotlib libraries. Ability to use educational tools and platforms in order to facilitate the teaching of machine learning concepts (e.g., conducting demos).

General Requirements

- Bachelor's degree in a STEM field.
- Knowledge and understanding of the Public School System (an advantage).
- Experience in teaching or mentoring students (preferably secondary school-age students), especially IT-related fields (highly desirable).
- Pedagogical qualification (an advantage).
- Strong communication and interpersonal skills to effectively engage and motivate high school students.
- Good command of the English language.

How to Apply:

Both individual applications and B2B proposals are welcome. Additionally, applications for the ML & DL courses and separate submissions for each defined course of the curriculum are acceptable.

For individual applicants, please:

- Fill in the [google form](#) highlighting your relevant experience (including teaching), your passion for teaching AI to high school students, your commitments and remuneration expectations.

For B2B proposals, please provide:

- detailed information about your company,
- list of trainers and their qualifications,
- previous experience in similar training,
- estimated budget for teaching/hour to 1 class of 15 students.

All the proposals and documentation should be sent to **education@fast.foundation** by April 10, 2024 (**prolonged up to April 20, 2024**). Shortlisted candidates will receive invitations to proceed to the next phase of the selection process.

Values and benefits that this opportunity will provide:

- Pioneer AI education in Armenian public schools to contribute to the future of education
- Make a meaningful impact on high school students' lives
- Gain valuable teaching and mentoring experience
- Network with local and international professionals passionate about AI education
- Receive recognition and exposure within the educational community
- Financial compensation for the teaching commitment