University of Victoria

Division of Continuing Studies | Arts, Science, Education, and Technology Programs
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Job posting

Position: Instructor, Machine Learning Fundamentals

Closing Date: Posting will remain open until the position is filled

Location of Work: Continuing Studies, University of Victoria, Victoria BC

Instruction hours: 36, **Sessions**: 12

Dates: September-December, 2022, with preparation in summer, 2022

Pay Rate: $5600 plus 4% vacation pay for instructing a 6-week course
         $1500, one-time for curriculum development

Delivery Mode: Currently online, in-person possible in the future

Continuing education has been an integral part of the University of Victoria since its inception in 1963. Today, the Division of Continuing Studies (DCS) provides adult and continuing education programming in co-operation with UVic faculties and community partners. We offer a comprehensive portfolio of programs in a range of academic disciplines, using diploma, certificate, degree and other programming models to serve adult, part-time, international and geographically dispersed students.

Position summary:

The Division of Continuing Studies is interested in developing long-term relationships with superior instructors who have high professional standards, excellent communication skills, enthusiasm and a commitment to creating learning experiences immersed in adult education principles.

We are seeking a professional who desires the opportunity to share their knowledge and experience in the field of Machine Learning. Our learners seek the knowledge and skills to expand their career options to enhance their current knowledge, skills, and abilities.

Qualifications:

- Minimum 3 years experience with demonstrated subject matter experience and expertise in the field of business intelligence, data analytics, and machine learning;
- undergraduate degree in a related field (Computer Science, Mathematics, Engineering, Statistics, etc.); Master's preferred;
- industry experience with the ability to illustrate your teaching with real-life examples;
- previous teaching experience (designing content for a course, training or presentation) is preferred;
- instructional experience with adult or non-traditional learners is considered an asset;
- excellent interpersonal, communication, and facilitation skills.

Course description:

This course covers fundamental concepts and components of Machine Learning (ML) such as regression, classification and clustering and essential tools, such as modern data visualization, and skills to fully understand the field of ML. This course is designed as an elective for our Professional Development Certificate in Business Intelligence and Data Analytics and a stand-alone course for those with data science and coding backgrounds.

Additionally, the course is packed with practical exercises based on real-life examples, so learners will also attain some hands-on practice building their own models. This course will then ladder to an AI Micro-credential that is under development.

Learning Objectives:

Upon completion of this course, students will learn:

- Data pre-processing steps, data exploring and visualization
- Differentiate between supervised and unsupervised machine learning techniques
- Optimization techniques (e.g., SGD)
- Linear models and extensions to nonlinearity using kernel methods
- Model complexity, overfitting and model regularization
- Nonparametric models such as K-Nearest Neighbors (KNN)
- Collaborative methods: boosting, bagging, random forests
- Introduce Artificial Neural Networks with Sklearn, TensorFlow and Keras
- Build Deep Models Using the Keras Sequential and Functional API
- Applying pattern recognition and regression models with deep learning
- Metrics and output evaluations for regression problems
- Metrics (e.g., confusion matrix, AUC,…) and output evaluation/interpretation for classifications
- Unsupervised methods: Dimensionality reduction, autoencoders and K-mean
- Introduction to deep generative models

Key duties/responsibilities:

- Develops and provides students with an approved Division of Continuing Studies syllabus based on the provided course description and learning outcomes, including detailed assignment dates, descriptions, rubrics, schedule and list of readings and resources.
- Organizes, prepares, and regularly revises and updates all course material.
- Uses appropriate technological options for course-related software.

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- Models effective oral and written communications that engage the learners and provide clarity and a rich learning environment for participants.

- Ensures all content delivered corresponds with overall course learning outcomes.

- Demonstrates consistency and fairness in the preparation and grading of submitted work and ensures that feedback is timely.

For further information about Business Intelligence and Data Analytics, please visit https://continuingstudies.uvic.ca/business-technology-and-public-relations/series/business-intelligence-and-data-analytics.

How to apply:

Please submit a cover letter and current resume (in pdf format) to:

Ash Moosavi, Program Coordinator
Division of Continuing Studies University of Victoria
bidacoord@uvic.ca

We would like to thank all applicants in advance for submitting their resumes. Please note only those candidates chosen to continue through the selection process will be contacted.

In accordance with UVic's COVID-19 Vaccination Policy for Employees hired after February 21, 2022, proof of full vaccination for all new UVic employees, including instructors, will be required.

Equity Statement:

The University of Victoria is an equity employer and encourages applications from women, persons with disabilities, members of visible minorities, Aboriginal Peoples, people of all sexual orientations and genders, and others who may contribute to the further diversification of the University. All qualified candidates are encouraged to apply; however, in accordance with Canadian Immigration requirements, Canadians and permanent residents will be given priority.

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