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ACCENTURE LABS

Artificial Intelligence Research Internships 2018

Time-Aware Neural Knowledge Graph embeddings	Human Activity Recognition With Knowledge Graph-based Machine Learning
Knowledge graph embedding models are neural networks architectures designed to predict links in large-scale knowledge graphs. Despite promising results on static graphs, most models do not take time into account, which is instead critical in real-world use cases. The intern will be in charge of developing a recently proposed time-aware neural graph embedding model, which will be evaluated on a number of business scenarios. Enhanchements to such model will be an extra achievement, and are subject to the duration of the internship. <u>Duration: 4-6 months</u> <u>Requirements:</u> • Enrolled in M.Sc in Computer Science, Computer Engineering or a closely related field. • Fluent Python • Good knowledge of Machine Learning foundations. • Knowledge of mainstream Deep Learning architectures (MLP, CNN, RNN, etc). • Working knowledge of Linux OS • A good foundation in mathematics, statistics and probability is preferred <u>Good to have:</u> • Familiarity with numpy, scikit-learn, tensorflow • Familiarity with knowledge graphs	Wearable devices unlock fine-grained and ubiquitous data acquisition. Existing machine learning models use this information to detect low-level activites such as “running”, “walking”, “biking”, etc. Neverthless, detecting complex high-level human activities such as “playing football”, “training for marathon” is still an open challenge. The intern will design and implement a predictive model that combines the detection of low-level human activities with reasoning and machine learning on knowledge graphs. The ultimate goal is designing a model that detects high-level activities by combining inference from raw sensor data and graph-based contextual datasets. <u>Duration: 4-6 months</u> <u>Requirements:</u> • Enrolled in a Ph.D in Computer Science, Computer Engineering or a closely related field. • A good foundation in mathematics, statistics and probability is preferred • Good knowledge of Machine Learning foundations. • Fluent Python • Working knowledge of Linux OS <u>Good to have:</u> • Familiarity with numpy, scikit-learn, tensorflow • Knowledge of mainstream Deep Learning architectures (MLP, CNN, RNN, etc). • Familiarity with knowledge graphs