Michele Proverbio

Software Engineer
Data Scientist

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@Proch92

Bio and Education

2020 — Master's degree in Computer Science and Engineering, University of Bologna

2015 — Bachelor's degree in Computer Science, University of Bologna

2011 — High School, Math and Science in Senigallia, Italy

1992 — Born on November 15 in Senigallia, Italy

Work Experience

4yr — System administrator and Data Scientist in Onit Group, Cesena. Ended Dec 2018

1yr — IT customer assistance in Computeresse, Senigallia

0.5yr — Teacher in multiple courses on Trashware and Linux Ubuntu.

Competitions

2018 VarGroup Hackaton.
AI-powered knowledge base and on-site operator assistance.
Sponsored by Apple, Cisco Webex

2017 VarGroup Hackaton.
Machine Learning in industrial R&D
Sponsored by IBM Watson

IT Security Wargames with Ce.Se.N.A. security group. RuCTF, DEFCON Qualifiers, Insomnihack and 0ctf among others.

2009 RoboCup Jr. National high school robotics competition in Turin, Italy.

Skills

Artificial Intelligence
Tensorflow, Gensim, Pytorch

Data Science
pandas, numpy, scikit, Apache Spark, Kafka, MongoDB

Programming Languages
Python, C, C++, Js, Ruby, Lua, Java

Sysops
Linux admin, Shell scripting, Active Directory, Apache, Nginx, Networking

Web Dev
Angular 7, Css3/Sass, Bootstrap, HTML5, Middleman, Django, Jinja2

Languages

Italian — mother tongue

English — Proficient C1

Personal Interests

Math · Esports · Physics · Cooking

Basketball · Rugby · Artificial Intelligence · Cinema

Personal Statement

I'm a 28 years old software engineer. I am passionate about science and knowledge, and I am in the constant search of it.

I believe in team work and personal growth.

I am passion-driven and I am looking forward to working in a dynamic environment.

Personal Projects

3D Rendering Engine
github.com/proch92/proch3d

I developed a rendering engine for studying purposes. I used C++ and openGL from scratch. The engine uses a custom 3d file format and custom shading pipelines.
Tech: C++, OpenGL, OpenGL ES

Steganography tools
github.com/proch92/psteg

I developed a tool for image steganogaphy analysis. It can extract useful informations to assist in steganography detection.
Tech: C

Time series prediction
github.com/proch92/ai-projects

I modeled a RNN for time series prediction with python and tensorflow. The project focuses on data preparation and augmentation to boost regression performances.
Tech: python, tensorflow

Big Data pipeline
github.com/proch92/bigdata-project

I designed a big data transform and query pipeline in pyspark and gitlab CI technologies to automatically test and run examples in google GCP using Google Cloud APIs.
Tech: python, Apache Spark, Google GCP, Gitlab CI

DDQN Reinforcement Learning
github.com/proch92/SIR-exam

I implemented a Dueling DQN in tensorflow to solve the cartpole reinforcement learning benchmark. I engineered a modified reward function to significantly boost convergence.
Tech: python, tensorflow, openAI gym

RSA
github.com/proch92/RSA

RSA public key cryptography algorithm implementation with custom big-number class and operations for OOP university exam.
Tech: C++

Py meta-model FSM language
github.com/proch92/iss

I implemented a meta-model language for platform-independent distributed systems in robotics. The meta-model offers a high level finite state machine framework for control logics. I used decorators to mimic a Domain Specific Language and asyncio subroutines to manage multiple fsm actors per-process.
Tech: python, asyncio

Master's Degree Thesys

I studied and reimplemented a recent continual learning technique, Growing Dual Memory. The technique uses a hybrid approach with two hierarchically organized auto organizing neuron maps and memory replay phases for long term memory consolidation. I also applied Transfer Learning techniques to fine tune a VGG CNN for feature extraction. The experiments showed very good results exceeding expectations compared to state of the art baseline results.
Tech: python, tensorflow, pandas, seaborn

Certifications

Machine Learning - Stanford - Coursera

Stanford machine learning course with strong mathematical basis and a look on business processes.
The course covers Gradient Descent for parameters optimization, unsupervised and supervised learning, SVM and PCA algorithms, and various techniques to analyze and optimize learning performances.