Vincent Marois

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EDUCATION

GEORGIA TECH

MS IN COMPUTER SCIENCE
May 2019 | GPA: 3.9/4.0
Specialization: Machine Learning

INSA LYON (FRANCE)

MS IN COMPUTER ENGINEERING
Dec 2017 | Ranked top 5%
Specialization: Signal Processing

SKILLS

MACHINE LEARNING

CNNs • GRUs/LSTMs • Attention (Transformer)
Classification • Regression
Reinforcement Learning
Visual Reasoning

RESEARCH

Experiments & Models Design
Attention to detail
Research paper writing

TECHNOLOGIES

Python • Unix • C/C++
PyTorch • NumPy • Pandas • TensorBoard
Design & Code Reviews • DevOps & Testing • Git

COURSEWORK

GRADUATE

Machine Learning
Deep Learning
Graduate Algorithms
Statistical ML
Data Visualization & Analytics
Image & Signal Processing
Probability & Statistics

CONFERENCES

2018-19 • PyTorch Developer Conference
2018 • NeurIPS ($1000 Grant to attend the conference and present a poster).

LINKS

Github:// vmarois
LinkedIn:// maroisvincent
Scholar:// Vincent Marois
vmarois.github.io

EXPERIENCE

BLOOMBERG | SOFTWARE ENGINEER

Sept 2020 - Present | London, UK

IBM RESEARCH | AI RESIDENT

August 2019 - August 2020 | Yorktown Heights, NY

- One of 10 *first* AI Residents, advised by Tim Klinger and Murray Campbell.
- Developed an environment to evaluate compositional and relational learning in neural models (*publication under review*).
- Quantified effectiveness of transfer learning in visual reasoning, resulting in accuracy gains of up to 18 points, using a new model (*publication*).

IBM RESEARCH | MACHINE LEARNING SOFTWARE ENGINEER INTERN

May 2018 – Nov 2018 | San Jose, CA

Mi-Prometheus: Built a PyTorch-based, *open-source* framework, which allowed the team to quickly iterate and build new models, all published:

- Core Developer: Designed main APIs and user interactions paradigms. Created documentation pipeline and tutorials to enable reproducible ML research.
- Re-implemented 4 multi-modal models and 2 datasets.
- Handled product life cycle, by releasing 3 versions (through GitHub).

Visual Question Answering:

- Re-implemented a state-of-the-art model (`arxiv:1803.03067`) in Python.
- Reduced training time by 10% by simplifying the architecture.
- Reached a 15pts accuracy improvement via Transfer Learning.

UNIVERSITY OF LUXEMBOURG | RESEARCH INTERN

June 2017 – August 2017 | Belval, LUX

- Assessed the performance per watt of a computational simulations platform (FEniCS) on ARM architecture.
- Reduced run-time of main computation by 24%, using load balancing to better use the different CPU cores.

SIEMENS DIGITAL FACTORY | SOFTWARE ENGINEERING INTERN

Sept 2016 – Feb 2017 | Karlsruhe, GER

- Evaluated the capabilities and use-cases of the Siemens MindSphere *Cloud for Industry* platform by developing web-based applications.
- Compared this offering to a major player on the market (*GE Predix*), referred the strong points of the competition, and collaborated with other teams on new Data Analytics features on MindSphere.

PUBLICATIONS

[1] T. Klinger, D. Adjodah, **Marois, Vincent**, J. Joseph, M. Rimer, A. S. Pentland, and M. Campbell, "A Study of Compositional Generalization in Neural Models," *Under Review at NeurIPS*, 2020.

[2] T. Jayram, **Marois, Vincent**, T. Kornuta, V. Albouy, E. Sevgen, and A. S. Ozcan, "Transfer Learning in Visual and Relational Reasoning," *arXiv preprint `arXiv:1911.11938`*, 2019.

[3] T. Kornuta, **Marois, Vincent**, R. L. McAvoy, Y. Bouhadjar, A. Asseman, V. Albouy, T. Jayram, and A. S. Ozcan, "Accelerating Machine Learning Research with MI-Prometheus," ***NeurIPS 2018 MLOSS Workshop***, 2018.

[4] **Marois, Vincent**, T. Jayram, V. Albouy, T. Kornuta, Y. Bouhadjar, and A. S. Ozcan, "On Transfer Learning using a MAC Model Variant," ***NeurIPS 2018 ViGiL Workshop***, 2018.