Alexis Linard | Postdoc Researcher

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Interests

Robotics, Machine Learning, Cyber-Physical Systems, Automata and Model Learning, Failure Diagnosis...

Education

Radboud University	**Nijmegen, The Netherlands**
Ph.D. in Computer Science	*2015–2019*

- ○ *Learning Models for Cyber-Physical Systems* (PhD Thesis)
- ○ Research topics: Cyber-Physical Systems, Automata Learning, Fault Trees
- ○ Supervisor: Frits Vaandrager

University of Nantes	**Nantes, France**
Master's Degree	*2013–2015*

Specialized in Natural Language Processing and Machine Learning

Master's thesis:

- ○ *Bilingual Lexicon Extraction using Comparable Corpora and Pivot Language*
  Supervisors: Béatrice Daille & Emmanuel Morin

Institute of Technology, University of Nantes	**Nantes, France**
Bachelor's Degree in Computer Science	*2012–2013*

Specialized in Systems Programming & Modeling

Institute of Technology, University of Nantes	**Nantes, France**
University Degree in Computer Science	*2010–2012*

Baccalaureate in Science	*2010*

with honours

Experience

Researcher

KTH – Royal Institute of Technology	**Stockholm, Sweden**
Postdoctoral Researcher	*from October 2019*

Department of Robotics, Perception, and Learning.

Correct-by-design and Socially Acceptable Autonomy.

Radboud University	**Nijmegen, The Netherlands**
Ph.D. Candidate	*September 2015–August 2019*

Learning Models for Cyber-Physical Systems (thesis).

Project in collaboration with Canon, under the Dutch "Robust design of Cyber-Physical Systems (CPS)" program:

- ○ Identification of Printjob Patterns.
- ○ Failure Prediction: case study, log analysis, failure modeling.
- ○ Fault Tree Induction for Safety-Critical Systems.

LINA - University of Nantes   **Nantes, France**
Intern as Researcher   *January–July 2015*
Bilingual Lexicon Extraction using Comparable Corpora and Pivot Language.

Universitat Politecnica de Catalunya   **Barcelona, Spain**
Intern as Researcher   *June–July 2014*
Preliminary Work on Asthmatic People Health Prediction.

Programmer

Netapsys   **Nantes, France**
Programmer/Analyst   *March–September 2013*
Project for French Ministry of Health

Coremain   **Santiago de Compostela, Spain**
Programmer/Analyst (intern)   *April–June 2012*
Working on web applications

References

Please, feel free to contact my referees for further information and recommendation:

Dr. **Jana Tumová**

✉ *tumova@kth.se*

Prof. **Frits Vaandrager**

✉ *f.vaandrager@cs.ru.nl*

Publications

Journal Publications

[1]: Bueno, M. L., Hommersom, A., Lucas, P. J., Linard, A. "Asymmetric hidden Markov models". 2017. *International Journal of Approximate Reasoning*, 88, 169-191.

Conference Papers

[1]: Linard, A., Bucur, D., Stoelinga, M. "Fault Trees from Data: Efficient Learning with an Evolutionary Algorithm". 2019. In *Proceedings of the Symposium on Dependable Software Engineering: Theories, Tools, and Applications, SETTA 2019*.

[2]: Linard, A., Bueno, M., Bucur, D., Stoelinga, M. "Induction of Fault Trees through Bayesian Networks". 2019. In *Proceedings of the 29th European Safety and Reliability Conference, ESREL 2019*.

[3]: Linard, A., van Pinxten, J. "An Application of Hyper-Heuristics to Flexible Manufacturing Systems". 2019. In *Proceedings of the 22nd Euromicro Conference on Digital System Design, DSD 2019*.

[4]: Linard, A., de la Higuera, C., Vaandrager, F. "Learning Unions of k-Testable Languages". 2019. In *International Conference on Language and Automata Theory and Applications, LATA 2019*.

[5]: Linard, A. "Learning Several Languages from Labeled Strings: State Merging and Evolutionary Approaches". 2018. Learning and Automata (LearnAut 2018). *arXiv preprint:* arXiv:1806.01630

[6]: Linard, A., Smetsers, R., Vaandrager, F., Waqas, U., van Pinxten, J., Verwer, S. "Learning Pairwise Disjoint Simple Languages from Positive Examples". 2017. Learning and Automata (LearnAut 2017). *arXiv preprint:* arXiv:1706.01663

[7]: Linard, A., Bueno, M. L. "Towards adaptive scheduling of maintenance for cyber-physical systems". 2016. In *Proceedings of the 7th International Symposium on Leveraging Applications of Formal Methods, 134-150*.

[8]: Linard, A., Daille, B., Morin, E. "Extraction de lexiques bilingues à partir de corpus comparables spécialisés à travers une langue pivot". 2016. In *Actes de la conférence conjointe JEP-TALN-RECITAL 2016 (2), 180-193*.

[9]: Bueno, M. L., Hommersom, A., Lucas, P. J., Verwer, S., Linard, A. "Learning complex uncertain states changes via asymmetric hidden Markov models: an industrial case". 2016. In *Proceedings of the Eighth International Conference on Probabilistic Graphical Models, PGM 2016, 50-61*.

[10]: Linard, A., Daille, B., Morin, E. "Attempting to bypass alignment from comparable corpora via pivot language". 2015. In *Proceedings of the Eighth Workshop on Building and Using Comparable Corpora, 32-37*.

Talks

Invited Seminar Talks

April 2018: Learning Adaptive Maintenance Policies: Towards Learning of Fault Trees from Data. Lorentz Workshop "Safety of Future Systems: Science meets Industry".

March 2018: Learning Adaptive Maintenance Policies for Cyber-Physical Systems. Dagstuhl Seminar 18121 "Machine Learning and Model Checking Join Forces".

Conference Talks

November 2019: SETTA 2019. Shanghai, China. "Fault Trees from Data: Efficient Learning with an Evolutionary Algorithm". **Best Presentation Award**.

September 2019: ESREL 2019. Hanover, Germany. "Induction of Fault Trees through Bayesian Networks".

August 2019: DSD 2019. Kallithea, Greece. "An Application of Hyper-Heuristics to Flexible Manufacturing Systems".

March 2019: LATA 2019. St Petersburg, Russia. "Learning Unions of k-Testable Languages".

July 2018: LearnAut 2018. Oxford, UK. "Learning Several Languages from Labeled Strings: State Merging and Evolutionary Approaches".

October 2016: ISOLA 2016. Corfu, Greece. "Towards Adaptive Scheduling of Maintenance for Cyber-Physical Systems".

July 2016: TALN 2016. Paris, France. "Extraction de lexiques bilingues à partir de corpus comparables spécialisés à travers une langue pivot".

July 2015: BUCC 2015. Beijing, China. "Attempting to bypass alignment from comparable corpora via pivot language".

Professional Activities

Session Chair

SETTA 2019.

Reviewer

ICCPS 2020, Springer Machine Learning, ICANN 2019, QEST 2019, ICGI 2018.

Awards

2019: **Best Presentation Award**, for the paper "Fault Trees from Data: Efficient Learning with an Evolutionary Algorithm" presented at SETTA 2019. **3400CNY**.

2019: **Radboud "Rappe Promotie Premie"**, for having completed the PhD within 4 years. **1500EUR**.

Teaching

Master Thesis Supervision

October 2018 – March 2019: Patrick Tan

Courses

2017, 2018: Languages and Automata (exercise classes + 1 lecture)

2016, 2017, 2018: Machine Learning in Practice (*coaching* of students for practical assignments)

2017: Algorithms and Data Structures (preparing weekly assignments)

Computer skills

Programming Languages: Python, Java, R, LaTeX

Languages

French: Mothertongue
English: Fluent
Spanish: Fluent
Dutch: Fluent