

# Theodoros Mitsikas

*PhD Candidate, Electrical and Computer Engineering*  
*Diploma Applied Mathematics*

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## Education

- 2017 – present **PhD Student**, *School of Electrical and Computer Engineering, National Technical University of Athens.*  
Fields: Natural Language Understanding, Knowledge Extraction & Representation, Argumentation Logic
- 2016 **Diploma in Applied Mathematical and Physical Sciences**,  
*National Technical University of Athens.*  
**Orientation:** Applied Mathematics  
**Specializations:** Mathematics for Information Science,  
Applied Mechanics – Computer Simulation

### Diploma thesis

*Development of a Rule Base in RuleML for Air Traffic Control Regulations in the Vicinity of the Airport, Grade: 10.*

Department of Mathematics, *Supervisor: Petros Stefanias*

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## Recent Work Experience

### RuleML Inc., Fredericton, N.B., Canada

- September 2018 – Present **PSOA RuleML**, *Developer, Tester, Maintainer of PSOA RuleML Language, Chair of PSOA RuleML technical group, member of PSOA RuleML core development team.*  
Bug fixing, feature implementation, documentation, wiki author, etc.  
Languages and Tools: RuleML, Java, Prolog, TPTP

### National Technical University of Athens, Athens, Greece

- October 2018 – Present **Teaching Assignments**, *School of Applied Mathematical and Physical Sciences,*  
Introduction to Object Oriented Programming (1<sup>st</sup> semester class)  
Graph Theory (8<sup>th</sup> semester class).  
Running labs, marking reports/tests/exams etc.
- June 2018 – **LEPS Project (Leveraging eID in the Private Sector)**, *Research Associate.*
- November 2018 Writing and reviewing deliverables, participation in the development of ISS+ architecture, model and protocol checking with Maude
- October 2017 – Present **Development of Gorgias-NL**, *Main Developer, NTUA with University of Cyprus and Technical University of Crete, Natural Language Understanding and automated conflict resolution for the argumentation system Gorgias.*  
Languages and Tools: Python, NLP Tools, Prolog

## Property Market Technologies, Athens, Greece

September 2017 – October 2018 **Property Market Research projects, AI applications**, *Research Analyst*, Part-time contract, Writing market reports/articles/research, development of prototype applications.

Developed Prototypes: News Aggregator and Selector, Sentiment Analysis of User Comments and Financial/Annual Reports

Tools: TensorFlow, NLTK, IBM Cloud

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## Languages

Greek	Native Speaker	
English	Very Good	<i>First Certificate in English (University of Cambridge), 2011, Grade: A Very good (reading, writing, speaking)</i>
French	Basic	<i>Good (reading); basic (writing, speaking)</i>

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## Key Computer Skills

Programming Languages	Python, RuleML (PSOA, POSL), Prolog, Java, others	Mathematical Tools	Matlab, Octave, Mathematica, LARVA, Maude
Other Skills	Bash, Scripts, Visual LISP, Experience with Raster and Vector Graphics Editors, Music Software	Operating Systems	Linux (CentOS, openSUSE, Debian), BSD, Windows
Open-Source Contributions	PSOA RuleML		<i>Maintainer, developer, tester</i>

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## Publications

### Journals

- 2019 Sofia Almpanti, Petros Stefanias, Harold Boley, Theodoros Mitsikas and Panayiotis Frangos. A Rule-Based Model for Compliance of Medical Devices Applied to the European Market. In: *International Journal of Extreme Automation and Connectivity in Healthcare (IJEACH) 1(2)*, 56-78, IGI Global, 2019.

### Conferences

- 2019 Marjolein Deryck, Theodoros Mitsikas, Sofia Almpanti, Petros Stefanias, Panayiotis Frangos, Iakovos Ouranos, Harold Boley and Joost Vennekens. Aligning, Interoperating, and Co-executing Air Traffic Control Rules Across PSOA RuleML and IDP. In: *Fodor P., Montali M., Calvanese D., Roman D. (eds) Rules and Reasoning. RuleML+RR 2019*. Lecture Notes in Computer Science, vol 11784. Springer.
- 2018 Sofia Almpanti, Petros Stefanias, Harold Boley, Theodoros Mitsikas and Panayiotis Frangos. Object-Relational Rules for Medical Devices: Classification and Conformity. In: *Panetto H., Debruyne C., Proper H., Ardagna C., Roman D., Meersman R. (eds) On the Move to Meaningful Internet Systems. OTM 2018 Conferences. OTM 2018*. Lecture Notes in Computer Science, vol 11230. Springer.
- 2018 Theodoros Mitsikas, Sofia Almpanti, Petros Stefanias, Panayiotis Frangos and Iakovos Ouranos. Formalizing Air Traffic Control Regulations in PSOA RuleML. *Proceedings of the Doctoral Consortium and Challenge @ RuleML+RR 2018, hosted by 2<sup>nd</sup> International Joint Conference on Rules and Reasoning (RuleML+RR 2018)*, volume 2204 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2018.

- 2018 Sofia Almpani, Petros Stefaneas, Harold Boley, Theodoros Mitsikas and Panayiotis Frangos. Computational Regulation of Medical Devices in PSOA RuleML. In: *Benzmüller C., Ricca F., Parent X., Roman D. (eds) Rules and Reasoning. RuleML+RR 2018*. Lecture Notes in Computer Science, vol 11092. Springer.
- 2018 Theodoros Mitsikas, Nikolaos I. Spanoudakis, Petros Stefaneas, and Antonis C. Kakas. From Natural Language to Argumentation and Cognitive Systems. In *Proceedings of the 5th International Workshop on Artificial Intelligence and Cognition*, volume 2090 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2018.
- 2017 Theodoros Mitsikas, Nikolaos I. Spanoudakis, Petros Stefaneas, and Antonis C. Kakas. From Natural Language to Argumentation and Cognitive Systems. In *Proceedings of the Thirteenth International Symposium on Commonsense Reasoning, COMONSENSE 2017, London, UK, November 6-8, 2017.*, volume 2052 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2017.
- 2017 Theodoros Mitsikas, Petros Stefaneas, and Iakovos Ouranos. A Rule-Based Approach for Air Traffic Control in the Vicinity of the Airport. In *Algebraic Modeling of Topological and Computational Structures and Applications*, volume 219, pages 423–438, Springer International Publishing, 2017.

### Posters

- 2019 Matthaios Mpournazos, Theodoros Mitsikas and Petros Stefaneas. Critical Argumentation and Dialectical Proofs. Joint poster session of BRAIN 2019, collocating RuleML+RR 2019, DecisionCAMP 2019, and GCAI 2019.
- 2019 Harold Boley, Gen Zou, Theodoros Mitsikas. Graph-Relational PSOATransRun Reasoners at RuleML.com/.org. Joint poster session of BRAIN 2019, collocating RuleML+RR 2019, DecisionCAMP 2019, and GCAI 2019.

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### Selected Presentations

- 2019 Theodoros Mitsikas, Sofia Almpani, Petros Stefaneas, Panayiotis Frangos and Iakovos Ouranos. Formalizing Air Traffic Control Regulations in PSOA RuleML. *FhG FOKUS Brown Bag Lecture, Fraunhofer-Gesellschaft, Berlin, Germany, March 1st, 2019 (remote contribution)*.
- 2018 Theodoros Mitsikas, Sofia Almpani, Petros Stefaneas, Panayiotis Frangos and Iakovos Ouranos. Formalizing Air Traffic Control Regulations in PSOA RuleML. *12<sup>th</sup> International Rule Challenge 2018 @ RuleML+RR 2018, hosted by 2<sup>nd</sup> International Joint Conference on Rules and Reasoning (RuleML+RR 2018), Luxembourg, September 20-26, 2018*. 12th International Rule Challenge 2018 Award Winner.

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### Honors and Awards

- 2019 BRAIN 2019 (Bolzano Rules and Artificial INtelligence Summit), Participation Grants, 16-24 September 2019, Bozen-Bolzano, Italy
- 2019 ACAI-2019/HAISS-2019 (Advanced Course on AI / Hellenic Artificial Intelligence Summer School), Participation Grants from Hellenic Artificial Intelligence Society (EETN), Crete 1-5 July 2019, Greece
- 2018 12<sup>th</sup> International Rule Challenge 2018 Award Winner. *12<sup>th</sup> International Rule Challenge 2018 @ RuleML+RR 2018, hosted by 2<sup>nd</sup> International Joint Conference on Rules and Reasoning (RuleML+RR 2018), Luxembourg, September 20, 2018*.

2018 LuxLogAI 2018 - Participation Grants for Young Researchers, Luxembourg, September 2018

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### Selected Activities

2018 Workshop Organizer “Rules: Logic and Applications”, December 19-20, 2018, and December 16-17, 2019, National Technical University of Athens, Greece.

2018 Participation in CEF Project LEPS (Leveraging eID in the Private Sector) meetings (Athens, Greece and Murcia, Spain)

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### Interests and Activities

Beekeeping Amateur Apiarist

Music Piano and Keyboards, Composing, Band Member

Swimming Podium Finishes in Junior National Competitions

Photography Artistic Photography Seminars at Students’ Cultural Society of Athens University (POFPA)