Alberto Pozanco

Personal Data

Nationality:	Spanish
Date of Birth:	3 March 1993
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Research Interests

Artificial Intelligence • Automated Planning • Heuristic Search • Autonomous Systems Goal Reasoning • Goal Recognition • Explainable AI • Multiagent Systems • Machine Learning

Education

April 2017 - Currently	PhD in Computer Science and Technology Universidad Carlos III, Madrid, Spain Advisor: Prof. Daniel Borrajo and Prof. Susana Fernandez Research topic: Goal Reasoning for Autonomous Agents
September 2016	MSc in Computer Science and Technology with specialization in Artificial Intelligence, Universidad Carlos III, Madrid, Spain Thesis: "Planning and Learning for Urban Traffic Control" Advisor: Prof. Daniel Borrajo and Prof. Susana Fernandez Grade: A
September 2015	BSc in Computer Science with specialization in Artificial Intelligence, Universidad Carlos III, Madrid, Spain Thesis: "Analysis and Implementation of an Automatic Poker Player" Advisor: Prof. Carlos Linares Grade: A

Publications

Conference Papers

1. **Multi-tier Automated Planning for Adaptive Behavior** Ciolek, D; D'Ippolito, N; Pozanco, A; and Sardina, S. In *Proceedings of ICAPS'20*, 66-74, Nancy (France), 2020.
2. **Finding Centroids and Minimum Covering States in Planning** Pozanco, A; E-Martín, Y; Fernández, S; and Borrajo, D. In *Proceedings of ICAPS'19*, 348-352, Berkeley (USA), 2019.
3. **Error Analysis and Correction for Weighted A*'s Suboptimality** Holte, R.C.; Majadas, R.; Pozanco, A.; and Borrajo, D. In *Proceedings of SoCS'19*, 135-139, Napa (USA), 2019.

4. **Counterplanning using Goal Recognition and Landmarks** Pozanco, A; E-Martín, Y; Fernández, S; and Borrajo, D. In *Proceedings of IJCAI'18*, 4808-4814, Stockholm (Sweden), 2018.

Journal Articles

1. **Learning-driven Goal Generation**. Pozanco, A; Fernández, S; and Borrajo, D. *AI Communications, vol. 31, no. 2, pp. 137-150*, 2018.

Workshop Papers

1. **Get me to Safety! Escaping from Risks using Automated Planning** Pozanco, A.; E-Martín, Y.; Fernández, S.; and Borrajo, D. In *Proceedings of IntEx/GR Workshop, ICAPS'20*, Nancy (France), 2020
2. **Insights from the 2018 IPC Benchmarks**. Cenamor, I.; and Pozanco, A. In *Proceedings of 5th Workshop on the International Planning Competition, ICAPS'19*, Berkeley (USA), 2019.
3. **Counterplanning in Real-Time Strategy Games through Goal Recognition**. Pozanco, A.; Blanco, A.; E-Martín, Y.; Fernández, S.; and Borrajo, D. In *Proceedings of 6th Workshop on Goal Reasoning, IJCAI'18*, Stockholm (Sweden), 2018.
4. **Distributed Planning and Model Learning for Urban Traffic Control**. Pozanco, A.; Fernández, S.; and Borrajo, D. In *Proceedings of Workshop on Knowledge Engineering for Planning and Scheduling, ICAPS'18*, Delft (Netherlands), 2018.
5. **Counterplanning using Goal Recognition and Landmarks** Pozanco, A.; E-Martín, Y.; Fernández, S.; and Borrajo, D. In *Proceedings of 5th Workshop on Distributed and Multi-Agent Planning, ICAPS'18*, Delft (Netherlands), 2018
6. **Urban Traffic Control Assisted by AI Planning and Relational Learning**. Pozanco, A.; Fernández, S.; and Borrajo, D. In *Proceedings of 9th International Workshop on Agents in Traffic and Transportation (IJCAI'16)*, New York (USA), 2016.
7. **On Learning Planning Goals for Traffic Control**. Pozanco, A.; Fernández, S.; and Borrajo, D. In *Proceedings of 4th Workshop on Goal Reasoning (IJCAI'16)*, New York (USA), 2016.

Project Participation

February 2020 - Currently
GOALHUB
Universidad Carlos III de Madrid & Goal System
Funded by: Ministerio de Economía y Competitividad. RTC-2017-6753-4
Description: Intelligent routing of trains over real-world rail networks.

July 2018 - Currently
ARPIA
Universidad Carlos III de Madrid & Universidad Politécnica de Valencia
Funded by: Ministerio de Economía y Competitividad. TIN2017-88476-C2-2-R
Description: Activity Recognition and Planning for Intelligent Assistants. The main objective of this project is to build an intelligent assistive technology that helps agent's to carry out their activities.

February 2017 - February 2020
PLICOGOR
Universidad Carlos III de Madrid & Goal System
Funded by: Ministerio de Economía y Competitividad. RTC-2016-5407-4
Description: Analysis, development and implementation of an intelligent planning system to generate routes in collective transport.

February 2016 - February 2017
GLASS
Universidad Carlos III de Madrid & Universidad Politécnica de Valencia
Funded by: Ministerio de Economía y Competitividad. TIN2014-55637-C2-1-R
Description: Goal-management for long term autonomy in smart cities. The main objective of the project is to analyze the problem of goal management for long-term autonomous systems, design appropriate algorithms for addressing the different components of goal management, and develop software tools that help on the application of this technology to Smart Cities tasks.

Work Experience

July 2020 - October 2020
AI Research Intern
JP Morgan, London, United Kingdom

September 2019 - January 2020
Research Internship
RMIT University, Melbourne, Australia
Description: Visit to Prof. Sebastian Sardina, where we explored the synthesis of adaptive behavior for autonomous agents using fully-observable non-deterministic (FOND) planning.

February 2016 - Currently
Research and Teaching Assistant
Universidad Carlos III, Madrid, Spain
Description: Research and Teaching Assistant at the Planning and Learning Group.

May 2014 - November 2014
Data Analyst
Jappysaver, Madrid, Spain
Description: Use of Artificial Intelligence, Data Mining and Business Intelligence techniques in the development of an information retrieval tool.

Teaching

Teaching Assistant

- **Machine Learning**, 3th of BSc. in Data Science and Engineering, Spring 2020. Universidad Carlos III de Madrid. (*English*)
- **Machine Learning**, 3th of BSc. in Computer Science and Engineering, Spring 2020. Universidad Carlos III de Madrid. (*Spanish*)
- **Machine Learning**, 3th of BSc. in Computer Science and Engineering, Spring 2019. Universidad Carlos III de Madrid. (*Spanish*)
- **Artificial Intelligence in Games**, 4th of BSc. in Computer Science and Engineering, Fall 2018. Universidad Carlos III de Madrid. (*Spanish*)

Supervision of MSc. Thesis

- **Counterplanning in Real-Time Strategy Games through Goal Recognition**, by Alejandro Blanco (co-supervised with Susana Fernández), Universidad Carlos III de Madrid.

Membership in BSc. Thesis Committees

- October 2020, BSc. in Computer Science and Engineering, Universidad Carlos III de Madrid.
- July 2018, BSc. in Industrial Technology, Universidad Carlos III de Madrid.
- October 2018, BSc. in Computer Science and Engineering, Universidad Carlos III de Madrid.

Scientific Activities

Invited Talks and Seminars

- Talk on "Goal Reasoning for Autonomous Agents using Automated Planning" at RMIT University, Melbourne, Australia (2019)

Conference Reviewer

- **Additional Reviewer** of the *35th AAAI Conference on Artificial Intelligence* **(AAAI'21)** .
- **Additional Reviewer** of the *34th AAAI Conference on Artificial Intelligence* **(AAAI'20)** .
- **Additional Reviewer** of the *29th International Conference on Automated Planning and Scheduling* **(ICAPS'19)** .
- **Additional Reviewer** of the *33th AAAI Conference on Artificial Intelligence* **(AAAI'19)** .
- **Additional Reviewer** of the *28th International Conference on Automated Planning and Scheduling* **(ICAPS'18)** .

Conferences and Workshops Attended

- Symposium on Combinatorial Search (SoCS). Napa (USA), 2019.
  Oral presentation in main conference
- International Conference on Automated Planning and Scheduling (ICAPS). Berkeley (USA), 2019.
  Oral presentation in main conference
  Oral presentation in Workshop on the International Planning Competition
- International Joint Conference on Artificial Intelligence (IJCAI). Stockholm (Sweden), 2018.
  Oral presentation in main conference
  Poster in main conference
  Oral presentation in Goal Reasoning Workshop
- International Conference on Automated Planning and Scheduling (ICAPS). Delft (Netherlands), 2018.
  Oral presentation in Knowledge Engineering for Planning and Scheduling Workshop
  Oral presentation in Distributed and Multi-Agent Planning Workshop
  Poster in Doctoral Consortium
- ICAPS Summer School on Planning Under Uncertainty. Noordwijk (Netherlands), 2018.
- International Joint Conference on Artificial Intelligence (IJCAI). New York (USA), 2016.
  Oral presentation in Agents in Traffic and Transportation Workshop
  Oral presentation in Goal Reasoning Workshop

Prizes, Grants and Awards

- Travel grants from SoCS 2019, ICAPS 2019, ICAPS 2018, IJCAI 2016.
- International Mobility grant from Universidad Carlos III de Madrid (2019).
- Runner-up in the **I-COM 2018 Data Science Hackathons**, San Sebastián, Spain.
- Runner-up in the 2nd **"Mathematics on High-School"** prize organized by Universidad Autónoma de Madrid, 2008.

Computer Skills

- **Programming Languages**: Python, C++, Java
- **Frameworks**: Scikit-learn, Numpy, Pandas, PyTorch, Dash