WASP | WALLENBERG AI, AUTONOMOUS SYSTEMS AND SOFTWARE PROGRAM

Current Calls & New Cluster Structure

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Current Calls

- NEST
  - Special session later
- Academic PhD Student Call 2022
  - Opened 2021-12-01
  - Closes 2022-02-24
  - 20 positions
  - All WASP areas
- Industrial PhD Student Call 2022
  - Opens 2022-01-21
  - Closes 2022-04-07
  - 15 positions
  - All WASP areas
- Postdoc projects with Aalto
  - Postdoc twinning projects between WASP and Aalto
  - Call released Spring 2022

New Cluster Model

- Based on the findings in the strategy document "WASP 2030 – Paving the Way"
- More flexible and with more PhD student involvement than before
- Three types of clusters:
  - Core Technology Clusters
    - Managed by WASP students
    - Focused on some core technology, theory, tool or method
  - Application Cluster
    - Gather WASP Faculty and PhD Students within the same application area
  - Area Cluster
    - Gather WASP Faculty and PhD Students within the same technical area
- Each PhD student may participate in
  - 0-2 Core Technology Cluster
  - 0-2 Area or Application Cluster
  - Maximum 4 clusters
- Students may propose new clusters

Core Technology Clusters

- 24 clusters initially
- Involve around 360 students

- Anomaly Detection (7)
- Bayesian Statistics (14)
- Causality and Causal Inference (13)
- Complex Systems (13)
- Cryptography (9)
- Distributed Systems & Cloud (18)
- Explainable AI (29)
- Agent Societies (5)
- Generative Models (19)
- Large-Scale Optimization (15)
- Learning from Small Data Sets & Incremental Learning (25)
- Math Foundations of AI other than ML (11)
- Multimodal ML (7)
- Multi-task and Transfer Learning (19)
- Natural Language Processing (10)
- Privacy-Enhancing Processing (5)
- Representation and Grounding (11)
- Safety and Robustness (22)
- Security and Privavcy-Aware Learning (8)
- Sequential Decision-Making and RL (44)
- Software Analysis and Testing (18)
- Theoretical spects of Non-Deep Learning (5)
- Theoretical Aspects of Deep learning (22)
- Geometric Deep learning (8)

Application Clusters

- 8 clusters:
  - Finance, Business Analytics & eCommerce – Henrik Hult
  - Smart Environments (forestry, farming, urban informatics, critical infrastructures) - Kary Främling
  - Healthcare & Pharmaceutical – Helena Lindgren
  - Life Science (joint with DDSL) – Kevin Smith
  - Manufacturing & Process Control (incl Logistics and Predictive Maintenance) – Atsuto Maki
  - Mobile Communications – Fredrik Tufvesson
  - Public Safety – Patrick Doherty
  - Transport Systems – Jonas Sjöberg

Area Clusters

- 9 clusters:
  - Autonomous Clouds and Networks – Paul Townend
  - Legal, Ethical, and Societal Aspects (also open for participation from WASP-HS) – Fredrik Heintz
  - Localization and Navigation – Gustaf Hendeby
  - Machine Learning, Deep Learning and other AI – Michael Felsberg & Johannes Stork
  - Mathematical Foundations of AI – Holger Rootzén
  - Perception and Learning – Kalle Åström
  - Robotics – Volker Krüger
  - Security – Sonja Buchegger
  - Software Engineering & Technology – Philipp Leitner

Signing up and Changing clusters

- You do this at
  - https://internal.wasp-sweden.org/networks-and-resources/clusters/

Cluster Meetings

- Most clusters have Zoom meetings on Thursday Jan 13
- Schedule and Zoom links available at
  - https://internal.wasp-sweden.org/the-wasp-winter-conference/
- New PhD students may attend cluster meetings also if they have not signed up (to learn)