

# AI Department in 2023 - Overview

- **Groups:** ML (Babuska), FAI (Mikolov), FM (Janota), AR (Suda)
- **People:** 18 junior/senior/TT researchers, 16.5 FTE
- **PhD students:** 12 (co-)supervised, 4 defended
- **Papers:** 6 in journals, 18 in conferences
- **Projects applied for (PIs):** 10, 4 funded, 3 rejected, 3 in eval.,
- **Awards:** M. Suda - winning CASC, J. Huerta y Munive - MC Fellow
- **Organization:** AITP'23, TABLEAUX'23, FroCoS'23, 1 workshop
- **Other:** Several invited talks, media appearances (T. Mikolov), AI lobbying
- Many visitors in 2023

# AI Department in 2023 - Selected Results

- *Toward Physically Plausible Data-Driven Models: A Novel Neural Network Approach to Symbolic Regression.* J Kubalík, E Derner, R Babuška. IEEE Access.
- *Alien coding.* T. Gauthier, M. Olsák, J. Urban. Int. J. Approx. Reason.
- *Backtracking Dynamical Cavity Method.* F. Behrens, B. Hudcová, and Lenka Zdeborová. Phys. Rev. X 13, 031021.
- *Preserving Semantics in Textual Adversarial Attacks.* D. Herel, H. Cisneros, T. Mikolov. ECAI 2023
- *Learning Program Synthesis for Integer Sequences from Scratch.* T. Gauthier, J. Urban, AAI 2023: 7670-7677
- *Graph Neural Networks For Mapping Variables Between Programs.* P. Orvalho, J. Piepenbrock, M. Janota, V. Manquinho in ECAI 2023
- *MizAR 60 for Mizar 50.* J. Jakubuv, K. Chvalovský, Z. Goertzel, C. Kaliszyk, M. Olsák, B. Piotrowski, S. Schulz, M. Suda, J. Urban. ITP 2023
- *Guiding an Instantiation Prover with Graph Neural Networks.* K. Chvalovský, K. Korovin, J. Piepenbrock, J. Urban. LPAR 2023: 112-123