

ATTILA BIRÓ

IT Manager :: Business Developer :: Researcher :: 2xPhD

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EXPERIENCE

CTO & CBDO

ITware

Dec 2012 – Ongoing Budapest, HU

- Leading development team (approx. 50 colleagues)
- Business development & R+D+I with Japanese market focus
- Leading the Research and Innovation Management

Research Fellow & Math AI Research Scientist

Obuda University (OE)

Apr 2024 – Ongoing Budapest, HU

- Researcher @Physiological Controls Research Center (PhysCon)
- AI researcher on bioinformatics and cybernetics projects (EKIK)
- PhD student/researcher (Applied Mathematics) (AIAMDI, ODNEAI)

Lecturer & Researcher

Sapientia Hungarian University Of Transylvania [EMTE]

Sep 2025 – Ongoing Targu Mures, RO

- Course: Bioinformatics Algorithms
- Researcher @Computational Intelligence Research Group (CIRG)

Lecturer

UMFST G.E. Palade Tg.Mures

Sep 2025 – Ongoing Targu Mures, RO

- Course: Web Application Development
- Course: Advanced Topics in Artificial Intelligence

Owner & CEO

4Dent Healthcare and Technology

Jun 2009 – Ongoing Veresegyház, HU

- Project management, business consultancy, R+D+I
- Dentistry services in multiple locations

Sports Medicine AI Research Scientist

Universidad de Málaga (UMA)

Feb 2021 – Ongoing Málaga, ES

- Researcher @UK Biobank @Grupo de Investigación Clinimetria
- PhD student/candidate/researcher (Health Sciences) (2021–Sep 2024)

Bioinformatics AI Research Scientist

IBIMA Plataforma Bionand

Feb 2021 – Sep 2024 Málaga, ES

LIFE PHILOSOPHY

“Set a goal so big that you can’t achieve it until you grow into the person who can.” Dokeshi no Michi

MOST PROUD OF



Courage I had

switching between different sectors



Rise of superpower at

unsolvable problems, doomed projects, impossible deadlines, weird techstack, parallel projects, under-planned tasks



Growth in Japanese turnover

from orders of a few thousand euros to a consistent annual revenues of over €300 000



Age is just a number

starting 2 PhDs at 45, in two different sectors, in a technology stack outside the comfort zone, across borders, in two different countries: ES & RO

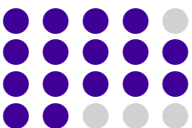
STRENGTHS

- creativity
- multitasking
- lead by example
- motivator & leader
- think global, act local
- EQ
- “no-limits” attitude
- active listener

- Business development
- R+D projects & AI
- Japanese Market
- cross-border co-operations

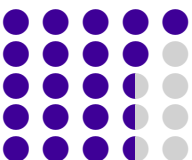
LANGUAGES

English
Romanian
Hungarian
German



SECTOR EXPERIENCE

IT & Telecom
Pharma & Healthcare
Industry
Construction
Automotive



- Research domains: AI, sports medicine, bioinformatics

Artificial Intelligence (AI) Research Scientist

UMFST G.E. Palade Tg.Mures

📅 Sep 2020 – Sep 2024

📍 Targu Mures, RO

- Researcher @Computer Science and Engineering Department
- PhD student/candidate/researcher (Informatics)

COO, PM & CBDO

Somody Group

📅 Dec 2006 – Dec 2012

📍 Budapest, HU

- Gyógyszerfutár Ltd: COO and Senior Tech PM (Jan 2010 – Dec 2012)
- ESZM Ltd: CBDO, Senior Business PM (Oct 2009 – Dec 2012)
- Somody Ltd: IT Consultant, Senior PM (Dec 2006 – Dec 2012)

CIO, PM & CBDO

Csiki-Bege Group

📅 Apr 2001 – Oct 2009

📍 Budapest, HU

- Chief Business Development Manager (Jan 2006 – Oct 2009)
- Project Director on Outsources projects (Aug 2006 – Oct 2009)
- Technical Project Manager (Jan 2003 – Oct 2009)
- CIO (Apr 2001 – Oct 2009)

Software Developer

Integrasoft

📅 Mar 2000 – Apr 2001

📍 Tg. Mures, RO

- Developing several products ranging from audio/video teleconferencing to home and industrial automation solutions
- Tech Stack: Java, C, C++

CERTIFICATIONS

- Scientific Certificates
- Technnnology, Sales, Leadership Certificates

MEMBERSHIP

- IEEE, IEEE Systems, Man, and Cybernetics Society (SMC)
- IEEE Communication Society
- ICT Association of Hungary (IVSZ)

JOURNAL SECTION EDITOR

- BMC Sports Science Medicine and Rehabilitation
- MDPI Applied Sciences
- MDPI Sensors

PEER REVIEWER

- PeerJ Computer Science
- MDPI Applied Sciences
- JMIR Serious Games
- IEEE International Conference on Systems, Man, and Cybernetics (SMC)
- Springer Interdisciplinarity in Engineering (Inter-Eng)

TECHNICAL SKILLS

Tech stack on projects led :: Java, NodeJS, Spring Boot, JavaScript, Angular, Vue, TypeScript, RoR, PWA, SPA, PHP, Laravel, LAMP, C++, Stripe, MySQL, PostgreSQL, MSSQL, Firebase, MongoDB, Material Design, CSS, SCSS, AWS, GCP, Git, Github, Bamboo, Jenkins, Gitlab CI, FlywayDB, SonarQube, Selenium, Gherkin, Cucumber, Testlink, Testrail, SoapUI, Appium, Docker, Android/iOS, Copilot, Agile, SCRUM, Kanban, TDD, BDD, Waterfall, Hybrid, V-model, RUP, Bugzilla, JIRA, Redmine, Spira, Project, Merlin, Visio, Draw.io, Atlassian products, Photoshop, Illustrator, Canva, Figma, Sketch, AdobeXD

Research :: LaTeX, Python, Google Collab Pro, Tensorflow, scikit-learn, numpy, pandas, pycaret, scipy, Librosa, Roboflow, opencv, Matlab, Rayyan, Quillbot, Turnitin, Semantic Scholar, Elicit, Research Rabbit, Scite, Quillbot, Anaconda, Overleaf, SPSS

Grant Systems :: DIMOP, GVOP, HEFOP, KMOP, GOP, GINOP, EUREKA, HU-RIZONT, VEKOP, H2020, RISE, Horizon Europe, AAL, INNOWWIDE, EUROSTARS

Quality Management :: ISO 9001, ISO 14001, ISO 27001

EDUCATION

PhD in Applied Mathematics

Obuda University, HU

📅 Sep 2025 - ... (On-Going)

PhD in Health Sciences

University of Malaga, ES

📅 Sep 2024, Grade: Sobresaliente (Excellent)

PhD in Informatics

UMFST GE Palade of Tg.Mures, RO

📅 Sep 2024, Grade: Summa cum laude (Excellent)

M.Eng. in Automation in Energetics

Petru Maior University, Tg. Mures, RO

📅 Jun 2002

M.Eng. in Industrial Automation

Petru Maior University, Tg. Mures, RO

📅 Jun 2001

PROJECTS

Project Manager, Business Analyst

Sunbears Cloud Campus

📅 May 2017 – Ongoing

📍 JP, TW, UK, USA, RO, HU

- Tech Stack: Firebase (Storage, Database, Hosting, Analytics, Auth, Functions, CLI, Bolt compiler), Stripe, AWS, Angular5+, Vue, PWA, Android, Angular Material Design, CSS3, Sass (Syntactically Awesome Style Sheets), JS, HTML5, SPA, Android, JIRA, Confluence, GIT, GITLAB, SonarQube, Docker, Javadoc, FlywayDB (@migration), Selenium, Gherkin, Cucumber, Testlink, IntelliJ, Appium, Jenkins
 - Delivery: Japan
 - SunBears is the only real-time, data-driven, and cloud-based sports solution ecosystem with a dedicated Android action tracker app and multiplatform PWA for multiple sports that records, analyzes, shows, and saves game/player/strategy-related data and statistics when you need it in between the game! The solution is for every coach and player in team and personal sports to learn and develop through their successes or failures constantly, wins or losses, based on real-time data!
 - Project URL: www.sunbears.com
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Project Manager, Research Director

H2020 iGAME

📅 Jan 2019 – July 2024

📍 UK, ES, HU, IT, MK

- Budget: 837.200 EUR
 - Horizon 2020 Research and Innovation Staff Exchange (RISE) project
 - Stack: VUE, Angular, TS, C++, Android, Laravel, LAMP, PWA, BCT
 - Consortium: BU, UMA, ITware, ArtHaus, SensorID, SAS
 - Delivery: UK, Spain, Hungary, Italy, North Macedonia
 - The Horizon 2020 Research and Innovation Staff Exchange (RISE) iGAME project (H2020-MSCA-RISE-2018) investigates evidence-based gamification techniques for eHealth and mHealth. It develops a multidimensional intervention support architecture/platform to improve the efficacy of gamified eHealth products.
 - Project URL: www.h2020-igame.eu
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Project Manager, Business Analyst

Ecolane redesign and test automation coverage

📅 May 2014 – Oct 2018

📍 FI, USA

- Budget: 190.000+ EUR
 - Tech Stack: Ruby on Rails, REST, jQuery, JSON, HTML5, PHP, KML, PJ2EE, Java, Selenium, Gherkin, Cucumber, Testlink, Testrail
 - Delivery: Finland, USA
 - Ecolane DRT is a cutting edge software solution for the management of demand response transportation which enables better forecasting and planning for transportation services. It can be accessed securely via standard web browsers and incorporates industry-leading tools to most effectively monitor operational processes and resources. Real-time optimization allows for the most efficient scheduling and reporting approach available on the market today. The target of the project is to redesign the current system written in PHP, Java (Tapestry), and Ruby on Rails and to develop the newest version of the web-based dispatch center UI of Ecolane DRT with Ruby on Rails (RoR) framework. The new solution gains more flexible functionality, and UX will be able to elevate the quality of their customer support and CSI.
 - Project URL: www.ecolane.com
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REFEREES

Prof. Dr. Antonio Cuesta-Vargas

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29071 Málaga, Spain

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1117 Budapest, Hungary

PUBLICATIONS

Journal Articles

- A. Biró, A. Cuesta-Vargas, and L. Szilágyi, "Ai-assisted fatigue and stamina control for performance sports on imu-generated multivariate times series datasets," *Sensors, MDPI*, vol. 24, no. 1, p. 132, 2024. DOI: 10.3390/s24010132.
 - L. Ramírez-Pérez, C. García-Conejo, M. Trinidad-Fernández, A. Biró, and et al., "Assessment of the quality of technophilia and technophobia validated questionnaires for management of digital health interventions: Systematic review and delphi consensus. (preprint)," *JMIR Publications, Journal of Medical Internet Research*, 2024. DOI: 10.2196/preprints.59712.
 - A. Biró, A. Cuesta-Vargas, J. Martin-Martin, L. Szilágyi, and S. Szilágyi, "Synthetized multilanguage ocr using crnn and svtr models for realtime collaborative tools," *Applied Sciences, MDPI*, vol. 13, no. 4419, 2023. DOI: 10.3390/app13074419.
 - A. Biró, A. Cuesta-Vargas, and L. Szilágyi, "Precognition of mental health and neurogenerative disorders using AI-parsed text and sentiment analysis," *Acta Universitatis Sapientiae – Informatica*, vol. 15, no. 2, pp. 359–403, 2023. DOI: 10.2478/ausi-2023-0022.
 - A. Biró, S. Szilágyi, and L. Szilágyi, "Optimal training dataset preparation for ai-supported multi-language real-time ocrs using visual methods," *Applied Sciences, MDPI*, vol. 13, no. 24, p. 13 107, 2023. DOI: 10.3390/app132413107.
 - A. Biró, S. Szilágyi, L. Szilágyi, J. Martin-Martin, and A. Cuesta-Vargas, "Machine learning on prediction of relative physical activity intensity using medical radar sensor and 3d accelerometer," *Sensors, MDPI*, vol. 23, no. 3595, 2023. DOI: 10.3390/s23073595.
 - A. Cuesta-Vargas, A. Biró, A. Escriche-Escuder, and et al, "Effectiveness of a gamified digital intervention based on lifestyle modification (igame) in secondary prevention: A protocol for a randomised controlled trial," *BMJ Open*, vol. 13, 2023. DOI: 10.1136/bmjopen-2022-066669.
 - A. Biró, K. Jánosi-Rancz, L. Szilágyi, A. Cuesta-Vargas, J. Martin-Martin, and S. Szilágyi, "Visual object detection with detr to support video-diagnosis using conference tools," *Applied Sciences, MDPI*, vol. 12, no. 5977, 2022. DOI: 10.3390/app12125977.
 - J. Martín-Martín, A. Jiménez-Partinen, A. Biró, et al., "Reliability study of inertial sensors lis2dh12 compared to actigraph gt9x: Based on free code," *Applied Sciences, MDPI*, vol. 12, no. 749, 2022. DOI: 10.3390/jpm12050749.
 - J. Martín-Martín, L. Wang, A. Biró, and et al., "The validity of the energy expenditure criteria based on open source code through two inertial sensors," *Sensors, MDPI*, vol. 22, no. 2552, 2022. DOI: 10.3390/s22072552.
 - J. Martín-Martín, A. Muro-Culebras, C. Roldán-Jiménez, A. Biró, and et al., "Evaluation of android and apple store depression applications based on mobile application rating scale," *International Journal of Environmental Research and Public Health, MDPI*, vol. 18, no. 12505, 2021. DOI: 10.3390/ijerph182312505.
 - J. Martín-Martín, C. Roldán-Jiménez, I. De-Torres, A. Biró, and et al., "Behavior change techniques and the effects associated with digital behavior change interventions in sedentary behavior in the clinical population: A systematic review," *Frontiers in Digital Health*, vol. 3, 2021. DOI: 10.3389/fdgth.2021.620383.
 - A. Muro-Culebras, A. Escriche-Escuder, J. Martin-Martin, A. Biró, and et al., "Tools for evaluating the content, efficacy, and usability of mobile health apps according to the consensus-based standards for the selection of health measurement instruments: Systematic review," *JMIR mHealth uHealth*, vol. 9, no. 12, e15433, 2021. DOI: 10.2196/15433.
 - J. Martín-Martín, C. Roldán-Jiménez, I. De-Torres, A. Biró, and et al., "Assessment of the quality of mobile applications (apps) for management of low back pain using the mobile app rating scale (mars)," *International Journal of Environmental Research and Public Health, MDPI*, vol. 17, no. 9209, 2020. DOI: 10.3390/ijerph17249209.
 - K. Ohno, H. Csilla, M. Hiroura, and A. Biró, "Manufacturing and market development of m2m/iot product kojimori with intercultural effort," *IPSI SIG Report*, vol. 2015-DC-98, no. 17, 2015.
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Conference Proceedings

- **A. Biró**, A. I. Cuesta-Vargas, and L. Szilágyi, “Enhanced spatial-temporal analysis for eeg-based microsleep detection: Integrating kalman filtering with voronoi tessellation and adaptive coverage control,” in *2024 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Kuching, Sarawak, Malaysia: IEEE, IEEE Xplore, 2025, pp. 4855–4860. DOI: 10.1109/SMC54092.2024.10831505.
- **A. Biró** and L. Szilágyi, “An enhanced ai pipeline for the detection and preliminary diagnosis of pneumonia and pulmonary malformations in athletes with yolov11,” in *2025 IEEE 29th International Conference on Intelligent Engineering Systems (INES)*, Palermo, Italy: IEEE, IEEE Xplore, 2025, pp. 231–236. DOI: 10.1109/INES67149.2025.11078199.
- **A. Biró** and L. Szilágyi, “Gamified ai-driven video monitoring for enhanced rehabilitation in performance sports,” in *2025 IEEE 12th International Conference on Computational Cybernetics and Cyber-Medical Systems (ICCC)*, Mahe Island, Beau Vallon, Seychelles: IEEE, IEEE Xplore, 2025, pp. 47–52. DOI: 10.1109/ICCC64928.2025.10999140.
- **A. Biró**, “Gamification, genai and reinforcement learning as motivational assets in performance sports,” in *IEEE 18th International Symposium on Applied Computational Intelligence and Informatics (SACI)*, Timisoara, Romania: IEEE, IEEE Xplore, 2024, pp. 315–320. DOI: 10.1109/SACI60582.2024.10619802.
- **A. Biró**, A. I. Cuesta-Vargas, and L. Szilágyi, “Ai-controlled training method for performance hardening or injury recovery in sports,” in *IEEE 22nd World Symposium on Applied Machine Intelligence and Informatics (SAMI)*, Stará Lesná, Slovakia: IEEE, IEEE Xplore, 2024, pp. 259–264. DOI: 10.1109/SAMI60510.2024.10432911.
- **A. Biró**, K. T. Jánosi-Rancz, and L. Szilágyi, “Real-time artificial intelligence text analysis for identifying burnout syndromes in high-performance athletes,” in *IEEE 22nd World Symposium on Applied Machine Intelligence and Informatics (SAMI)*, Stará Lesná, Slovakia: IEEE, IEEE Xplore, 2024, pp. 253–258. DOI: 10.1109/SAMI60510.2024.10432817.
- **A. Biró**, A. I. Cuesta-Vargas, J. Martin-Martin, and S. M. Szilagyi, “Ai-supported sports safety and preventive health solutions in performance sports,” in *International Conference of PhD Students and Young Doctors*, Tirgu Mures, Romania: Book of abstracts 6/2023, ISSN: 2602-1609, Section:4, 2023.
- **A. Biró**, A. I. Cuesta-Vargas, and L. Szilágyi, “Applied ai for real-time detection of lesions and tumors following severe head injuries,” in *IEEE 21st International Symposium on Intelligent Systems and Informatics (SISY)*, Pula, Croatia: IEEE, IEEE Xplore, 2023, pp. 653–658. DOI: 10.1109/SISY60376.2023.10417915.
- **A. Biró**, A. I. Cuesta-Vargas, and L. Szilágyi, “Srpe and acwr to control fatigue levels and minimize injuries in performance sports,” in *IEEE International Conference on Systems, Man, and Cybernetics (SMC), Special Section Cyber*, Honolulu, Oahu, HI, USA: IEEE, IEEE Xplore, 2023, pp. 2808–2813. DOI: 10.1109/SMC53992.2023.10394349.
- **A. Biró**, A. I. Cuesta-Vargas, and S. M. Szilágyi, “Predictive sports strategy approach using yolo and yolo-nas in performance sports,” in *IEEE 21st International Symposium on Intelligent Systems and Informatics (SISY)*, Pula, Croatia: IEEE, IEEE Xplore, 2023, pp. 303–308. DOI: 10.1109/SISY60376.2023.10417876.
- **A. Biró**, A. I. Cuesta-Vargas, and S. M. Szilágyi, “Real-time disease and covid-19 detection pipeline from voice for performance sports,” in *IEEE International Conference on Systems, Man, and Cybernetics (SMC), Special Section Cyber*, Honolulu, Oahu, HI, USA: IEEE, IEEE Xplore, 2023, pp. 2309–2314. DOI: 10.1109/SMC53992.2023.10394396.
- **A. Biró**, A. Cuesta-Vargas, J. Martin-Martin, and S. M. Szilagyi, “Ai proxy in sports safety for multilingual collaborative video-diagnosis solutions,” in *International Conference of PhD Students and Young Doctors*, Tirgu Mures, Romania: Book of abstracts 5/2022, ISSN: 2602-1609, Section: Science and Technology, 2022, p. 153. [Online]. Available: https://phd.umfst.ro/uploads/BOOK_OF_ABSTRACTS_2022.pdf.
- **A. Biró**, K. T. Jánosi-Rancz, A. Cuesta-Vargas, J. Martin-Martin, and S. M. Szilagyi, “Applied ensemble learning methods and ml models to support multilingual, realtime distant diagnostics,” in *International Conference of PhD Students and Young Doctors*, Tirgu Mures, Romania: Book of abstracts 4/2021, ISSN: 2602-1609, Section:5, 2021, p. 188. [Online]. Available: https://phd.umfst.ro/uploads/BOOK_OF_ABSTRACTS_2021.pdf.
- K. Ohno, M. Hiroura, and **A. Biró**, “Development of sake brewing entrepreneurs support system in fukushima,” in *IIEEJ International Workshop on Image Electronics and Visual Computing*, Da Nang, Vietnam: IIEEJ, 2017.