ATTILA BIRÓ

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

0000-0002-0430-9932   **biroattila**   **abiro.me**

EXPERIENCE

CTO & CBDO
ITware

📅 Dec 2012 – Ongoing   📍 Budapest, HU

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

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
- Applied Mathematics AI researcher
- PhD student/researcher (Applied Mathematics) (from Sep 2025)

Owner & CEO
4Dent Healthcare and Technology

📅 Jun 2009 – Ongoing   📍 Veresegyház, HU

- Project management, business consultancy
- Research and development services
- Dentistry services in multiple location

Sports Medicine AI Research Scientist
Universidad de Málaga (UMA)

📅 Feb 2021 – Sep 2024   📍 Málaga, ES

- Researcher @UK Biobank
- Researcher @Grupo de Investigation Clinimetria
- PhD student/candidate/researcher (Health Sciences)

Bioinformatics AI Research Scientist
IBIMA Plataforma Bionand

📅 Feb 2021 – Sep 2024   📍 Málaga, ES

- Doctoral researcher
- Fields: Artificial Intelligence, sports safety, bioinformatics

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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)

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

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📈 **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
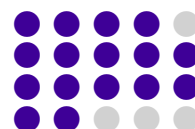

Business development   R+D projects & AI
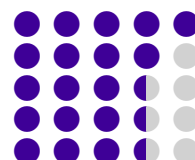Japanese Market   cross-border co-operations

LANGUAGES

English   ●●●●○
Romanian   ●●●●●
Hungarian   ●●●●●
German   ●●●○○

SECTOR EXPERIENCE

IT & Telecom   ●●●●●
Pharma & Healthcare   ●●●●○
Industry   ●●●●○
Construction   ●●●●○
Automotive   ●●●●○

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++

System Administrator
Petru Maior University (UPM)

📅 Nov 1996 – Apr 2001   📍 Tg. Mures, RO

- System and network administration
- Software and IT infrastructure management
- Infrastructure: Unix/Linux/Solaris

CERTIFICATIONS

- Scientific Certificates
- Technnology, Sales, Leadership Certificates

MEMBERSHIP

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

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

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

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

REFEREES

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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 acti-graph 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," *IPSJ SIG Report*, vol. 2015-DC-98, no. 17, 2015.

👥 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.

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