# LÁSZLÓ PAPP, PHD

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Citations	1293 (08.2023)
Nationality	Hungarian
Date of birth	31.03.1983
Family status	Married, one child



## PROFILE

I am a **computer scientist**, **medical physicist** and **entrepreneur** with a 20+ years' academic and industrial experience in the field of medical imaging, image processing and artificial intelligence.

I dedicate my whole professional carrier to support endeavours of **personalized medicine**, throughout proposing novel **AI** and **data analysis** methodologies in the field of **cancer research**, covering the range of both **classic** and **quantum computing**.

I **co-founded** and led the **AI vision** as well as development processes of **Dedicaid Ltd** (Vienna, Austria), a **spin-off** of the Medical University of Vienna from 2018 till 2023 April, when it was **acquired** by **Telix Pharmaceuticals** (Australia). The startup focuses on **cloud-native**, **AI-driven medical imaging data analysis** to predict clinical **endpoints**, with a particular focus on **tumour** characterization.

Throughout my professional career, I gained an extensive knowledge in team and project management, coaching, mentoring, complex software architecture design and medical regulatory (MDR)-conform software development lifecycle management processes.

#### Keywords

Quantum computing, classic computing, AI, machine learning, biomorphic computing, radiomics, medical imaging, image analysis, clinical interpretability

## **PROFESSIONAL EXPERIENCE**



#### **POSTDOCTORAL RESEARCHER**

Center for Medical Physics and Biomedical Engineering, Medical University of Vienna | Vienna, Austria 04/2021 -



#### **GROUP LEADER**

Applied Quantum Computing Group (AQC)| Center for Medical Physics and Biomedical Engineering, Medical University of Vienna | Vienna, Austria 04/2022 –

Conducting original research in the field of imaging, image analysis, artificial intelligence, radiomics and quantum computing;

Mentoring PhD students in day-to-day activities who conduct their research as part of the Division of Nuclear Medicine (Prof. Marcus Hacker), and the Christian Doppler Laboratory for Applied Metabolomics (Prof. Alexander Haug) within MUW;

Member of the Medical Device Regulation (MDR) unit covering software-related MDR affairs;

Co-lecturer in MUW thesis Seminars: Novel Environments for Rapid Development of Software – NERDS (preparation-21S);



#### **RESEARCHER | PHD STUDENT**

Center for Medical Physics and Biomedical Engineering, Medical University of Vienna | Vienna, Austria 04/2017 – 01/2021

Conducting PhD research in the field of artificial intelligence and radiomics;

Mentoring PhD students in day-to-day activities affiliated to the Division of Nuclear Medicine (Prof. Marcus Hacker), the QIMP Team CMPBME (Prof. Thomas Beyer) and the Christian Doppler Laboratory for Applied Metabolomics (Prof. Alexander Haug) within MUW;

Co-lecturer in MUW thesis Seminars: Novel Environments for Rapid Development of Software – NERDS (860.370-17S, 860.046-18S);

#### DEDICAID Advanced clinical decision support

## **CO-FOUNDER | CTO / AI VISIONARY**

Dedicaid GmbH, Vienna, Austria 08/2018 – 05/2023

Conceptualizing and implementing the automated machine learning (AutoML) engine of Dedicaid GmbH to manifest a zero-code, zero-tune machine learning model building and cross-validation scheme for the startup for building prediction models from medical data;

Overseeing and managing the cloud service development processes



## **RESEARCH ASSISTANT**

Division of Nuclear Medicine, Medical University of Vienna | Vienna, Austria 01/2016 - 04/2017

Development of radiomic feature extraction and machine learning algorithms for PET/CT;

Methodological design (machine learning) of the project "Christian Doppler Laboratory for Applied Metabolomics" (PI: Prof. Alexander Haug)



#### HEAD OF EVALUATION SOFTWARE R&D DIVISION Mediso Medical Imaging Systems Ltd. | Budapest, Hungary 07/2009 – 12/2015

Manager of clinical software development and MDR CE certification processes for the InterView<sup>™</sup> XP and Interview<sup>™</sup> FUSION clinical evaluation software;

Coordinator of Tera-Tomo<sup>™</sup> SPECT and PET image reconstruction software research and development activities in collaboration with the Budapest University of Technology and Economics (Prof. Balázs Benyó, Prof. László Szirmay-Kalos);

Manager of PET/CT radiomics research conducted with the Medical University of Bonn, Germany, Department of Nuclear Medicine (Prof. Ralph Bundschuh);

Manager of core-technology developments including image processing, clinical and preclinical PET, SPECT, CT image reconstruction, radiomics and visualization components;



## SCIENTIFIC ASSISTANT | COMPUTER SCIENTIST

UK-SH Campus Kiel, Nuclear Medicine Department | Kiel, Germany 05/2007 – 07/2009

Developed and published sentinel lymph node detection and delineation algorithms in SPECT-CT images;

Developed and published image fusion and registration algorithms for PET/SPECT/CT registration;



#### SOFTWARE DEVELOPER Mediso Medical Imaging Systems Ltd. | Budapest, Hungary 06/2006 - 05/2007

Developed the core architecture of the Interview<sup>™</sup> FUSION clinical evaluation software.



#### SCIENTIFIC ASSISTANT | CEEPUS STUDENT LKH-University Clinic Graz, Department of Radiology | Graz, Austria 02/2005 – 05/2005

Developed and published CT segmentation and classification methods to characterize funnel chest deformities in children (team-lead: Prof. Erich Sorantin) participating in the CEEPUS student grant program;

## **EDUCATION**



PHD IN MEDICAL PHYSICS QIMP Team, Center for Medical Physics and Biomedical Engineering, Medical University of Vienna | Vienna, Austria 04/2017 – 01/2021

Thesis title: Computer-aided, image-derived tumour characterization utilizing multi-layer machine learning

Supervisor: Prof. Thomas Beyer



MSC IN COMPUTER SCIENCE

University of Szeged, Faculty of Science and Informatics | Szeged, Hungary 09/2001 - 06/2006

Field: Software Engineering, Mathematics

Thesis title: Segmentation of Medical X-Ray Images

Main courses: Software Engineering, Mathematics, Image processing, Computer Vision

SKILLS
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Languages	Hungarian (Mother language);
	English (Proficient);
	German (Intermediate)
Technical	C++; Visual Studio; Atlassian (Jira, Confluence)
Professional	Research and development project planning, execution, management and demonstration skills;
	Complex software architect skills
Teaching	Lecturer skills in MUW thesis seminars and research activity-related summer schools
Fields of expertise	Image processing; Image reconstruction (SPECT, PET, CT); Image registration; Artificial intelligence; Quantum computing; Computer Vision; Computer Graphics
Medical regulatory industry standards	ISO 62304 (Software Development Lifecycle Management)
	ISO 62366 (Usability Engineering)
	ISO 14971(Risk Management)
	ISO 13485 (Quality Management)
Personal	Team building, coaching, mentoring skills;
	Presentation and demonstration skills.

## COMMUNITY AND VOLUNTEER ACTIVITIES

2011 -



JURY MEMBER AND MENTOR Scientific and Innovation Talent Recruitment Contest for Youth | Hungarian Association for Innovation | Budapest, Hungary

Mentoring and judging applications in the Hungarian Scientific and Innovation Talent Recruitment Contest for Youth in a group of 16 invited jury members. Selected as the former winner of the contest in 1999.

#### HOBBIES

**Origami** – author of 4 origami books and 2 multimedia CD products published between 1996 – 2003 in Hungary.

#### GRANTS

PI of FOCUS-M grant "Quantum Image Analysis", 50.000 EUR, CMPBME, MUW | 2023 -

**PI** of FOCUS-XL grant "Foundations of a Quantum Computational Lab at the CMPBME", 75.000 EUR + 18-months full-time Postdoc, CMPBME, MUW | 2019 - 2022

**Co-PI** of HOLY-2020 EraCoSysMed EU project "Improved treatment stratification for Hodgkin lymphoma patients through the use of deep learning, molecular imaging and relevant clinical data", project ID: EraCoSys 49 Allocated funding for MUW: 195 951 EUR | 2019 – 2023

**PI** (Mediso Ltd, P26) in FP7-HEALTH EU project "Imaging of Neuroinflammation in Neurodegenerative Diseases (IMNIND)", project ID: 278850; Allocated funding for P26 SME: 253 440 EUR | 2012 - 2015

#### AWARDS

Award of Excellence 2021 for outstanding PhD dissertation | Bundesministerium Bildung, Wissenschaft und Fordchung, Austria | 2021

Alavi-Mandell Award for the paper "Optimized Feature Extraction for Radiomics Analysis of 18 F-FDG PET Imaging" | Journal of Nuclear Medicine | 2020

Alavi-Mandell Award for the paper "Glioma Survival Prediction with Combined Analysis of In Vivo 11 C-MET PET Features, Ex Vivo Features, and Patient Features by Supervised Machine Learning" | Journal of Nuclear Medicine | 2019

Special prize "Förderung der Digitalen Transformation des Fachgebietes Nuklearmedizin" with the journal paper "Glioma survival prediction with the combined analysis of in vivo 11C-MET-PET, ex vivo and patient features by supervised machine learning", (J. Nucl. Med. 2017) German Nuclear Medicine Association (DGN)| 2018

Poster prize "Combined Genetic Algorithm and Simulated Annealing approach for automated feature selection of supervised machine learning evaluations" | 1st Technology Summer Workshop of the ESMI- TOPIM TECH | Chania, Greece | 2016

National 1<sup>st</sup> prize at the Scientific and Innovation Talent Recruitment Contest for Youth with the project work "Computer graphics education with virtual origami" Hungarian Association for Innovation | 1999

## PUBLICATIONS

5-years first-author top-journal cumulative impact factor: 44.6

## FIRST / LAST AUTHOR | TOP JOURNAL PUBLICATIONS IN LAST 5-YEARS (5)

Moradi, S., Spielvogel, C., Krajnc, D. ..., **Papp L**. Error mitigation enables PET radiomic cancer characterization on quantum computers. Eur J Nucl Med Mol Imaging (2023). <u>https://doi.org/10.1007/s00259-023-06362-6</u>. **IF (2023): 10.057** 

Grahovac, M., Spielvogel, C., Krajnc, D. ... **Papp L**. Machine learning predictive performance evaluation of conventional and fuzzy radiomics in clinical cancer imaging cohorts. Eur J Nucl Med Mol Imaging (2023). <u>https://doi.org/10.1007/s00259-023-06127-1</u>. **IF (2023): 10.057** 

**Papp L**, Spielvogel CP, Grubmüller B, Grahovac M, Krajnc D, Ecsedi B, Sareshgi RAM, Mohamad D, Hamboeck M, Rausch I, Mitterhauser M, Wadsak W, Haug AR, Kenner L, Mazal P, Susani M, Hartenbach S, Baltzer P, Helbich TH, Kramer G, Shariat SF, Beyer T, Hartenbach M, Hacker M. Supervised machine learning enables non-invasive lesion characterization in primary prostate cancer [68Ga]Ga-PSMA-11 PET/MRI. Eur J Nucl Med Mol Imaging. 2020 Dec; Available from: <u>https://pubmed.ncbi.nlm.nih.gov/33341915/</u>. **IF (2020): 9.236** 

 Papp L, Rausch I, Grahovac M, Hacker M, Beyer T. Optimized Feature Extraction for Radiomics Analysis of 18 F-FDG PET Imaging. J Nucl Med [Internet]. 2019 Jun;60(6):864–72. Available from: <u>http://jnm.snmjournals.org/lookup/doi/10.2967/jnumed.118.217612</u>. IF (2019): 7.887

**Papp L**, Pötsch N, Grahovac M, Schmidbauer V, Woehrer A, Preusser M, Mitterhauser M, Kiesel B, Wadsak W, Beyer T, Hacker M, Traub-Weidinger T. Glioma Survival Prediction with Combined Analysis of In Vivo 11 C-MET PET Features, Ex Vivo Features, and Patient Features by Supervised Machine Learning. J Nucl Med [Internet]. 2018 Jun;59(6):892–9. Available from: <a href="http://jnm.snmjournals.org/lookup/doi/10.2967/jnumed.117.202267">http://jnm.snmjournals.org/lookup/doi/10.2967/jnumed.117.202267</a>. IF (2018): 7.354

## FIRST / LAST AUTHOR | PEER-REVIEWED JOURNAL PUBLICATIONS (5)

**Papp** L, Rasul S, Spielvogel C P., Krajnc D, Poetsch N, Woehrer A, Patronas E-M, Ecsedi B, Furtner J, Mitterhauser M, Rausch I, Widhalm G, Beyer T, Hacker M, Traub-Weidinger T. Sexspecific radiomic features of L-[S-methyl-11C] methionine PET in patients with newlydiagnosed gliomas in relation to IDH1 predictability Frontiers in Oncology, vol:13, 2023, DOI=10.3389/fonc.2023.986788. Available from:

https://www.frontiersin.org/articles/10.3389/fonc.2023.986788/full

Krajnc D, Spielvogel C P., Grahovac M, Ecsedi B, Rasul S, Poetsch N, Traub-Weidinger T, Haug A R., Ritter Zs, Alizadeh H, Hacker M, Beyer T, **Papp L**. Automated data preparation for in vivo tumor characterization with machine learning. Frontiers in Oncology, vol:12, 2022. DOI:10.3389/fonc.2022.1017911. Available from:

https://www.frontiersin.org/articles/10.3389/fonc.2022.1017911

Moradi, S., Brandner, C., Spielvogel, C. ... **Papp L**. Clinical data classification with noisy intermediate scale quantum computers. Sci Rep 12, 1851 (2022). <u>https://doi.org/10.1038/s41598-022-05971-9</u> **Papp L**, Spielvogel CP, Rausch I, Hacker M, Beyer T. Personalizing Medicine Through Hybrid Imaging and Medical Big Data Analysis. Front Phys [Internet]. 2018 Jun 7;6. Available from: <u>https://www.frontiersin.org/article/10.3389/fphy.2018.00051/full</u>.

**Papp L**, Juhasz R, Travar S, Kolli A, Sorantin E. Automatic detection and characterization of funnel chest based on spiral CT. J Xray Sci Technol [Internet]. 2010;18(2):137–44. Available from: <u>https://www.medra.org/servlet/aliasResolver?alias=iospress&doi=10.3233/XST-2010-0249</u>

## FIRST/LAST AUTHOR | CONFERENCE PROCEEDINGS / PRESENTATIONS / ABSTRACTS (26)

Spielvogel CP, Grahovac M, Krajnc D, Hacker M, Beyer T, Haug AR, **Papp L**. Evaluation of quantum-encoding for machine learning features in neural network-based predictive models. Annual Congress of the European Association of Nuclear Medicine 2020, Eur J Nucl Med Mol Imaging (2020) 47 (Suppl 1): S276. DOI: 10.1007/s00259-020-04988-4

**Papp L**, Spielvogel CP, Krajnc D, Grahovac M, Beyer T, Hartenbach M, Hacker M. In-vivo D'Amico score for predicting low-vs-high risk and biochemical recurrence in prostate patients from PET/ MRI with machine learning. Annual Congress of the European Association of Nuclear Medicine 2020, Eur J Nucl Med Mol Imaging (2020) 47 (Suppl 1): S172. DOI: 10.1007/s00259-020-04988-4

**Papp L**, Rasul S, Weber M, Grahovac M, Beyer T, Hacker M, Traub-Weidinger T. Understanding gender pattern differences in 11C-Methionine PET Glioma patients with radiomics analysis. Annual Congress of the European Association of Nuclear Medicine 2020, Eur J Nucl Med Mol Imaging (2020) 47 (Suppl 1): S165. DOI: 10.1007/s00259-020-04988-4

**Papp L**, Spielvogel CP, Krajnc D, Grahovac M, Beyer T, Hartenbach M, Hacker M. in vivo D'Amico score for low-high risk and biochemical recurrence prediction in prostate patients with PET/MRI and machine learning. Nuklearmedizin 2020; 59(02): 96. DOI: 10.1055/s-0040-1708140

**Papp L**, Rasul S, Weber M, Grahovac M, Beyer T, Hacker M, Traub-Weidinger T. Understanding gender pattern differences in MET-PET Glioma patients with radiomics analysis. Nuklearmedizin 2020; 59(02): 144-145. DOI: 10.1055/s-0040-1708295

**Papp L**, Spielvogel CP, Grahovac M, Beyer T, Hacker M. Comparison of machine learningdriven lesion classifiers in prostate PET/MRI cases over different repeatability categories of radiomic features. Nuklearmedizin 2019; 58(02): 171-172. DOI: 10.1055/s-0039-1683672

**Papp L**, Rausch I, Hacker M, Beyer T. Fuzzy Radiomics: A novel approach to minimize the effects of target delineation on radiomic models. Nuklearmedizin 2019; 58(02): 107-108. DOI: 10.1055/s-0039-1683478

**Papp L**, Spielvogel CP, Grahovac M, Beyer T, Hacker M. The role of PET/MR imaging, PSA and patient age in risk prediction for lesions from prostate cancer. Annual Congress of the European Association of Nuclear Medicine 2019, Eur J Nucl Med Mol Imaging (2019) 46 (Suppl 1): S175. DOI: 10.1007/s00259-019-04486-2

**Papp L**, Spielvogel CP, Grahovac M, Beyer T, Hacker M. Comparison of machine learningdriven lesion classifiers in PET/MR images of prostate cancer patients. Annual Congress of the European Association of Nuclear Medicine 2019, Eur J Nucl Med Mol Imaging (2019) 46 (Suppl 1): S253. DOI: 10.1007/s00259-019-04486-2

**Papp L**, Rausch I, Hacker M, Beyer T. Fuzzy Radiomics: A novel approach to minimizing the effects of target delineation on radiomic models for PET. Annual Congress of the European Association of Nuclear Medicine 2019, Eur J Nucl Med Mol Imaging (2019) 46 (Suppl 1): S253. DOI: 10.1007/s00259-019-04486-2

**Papp L**, Grahovac M, Rausch I, Beyer T. Feature Extraction Optimization by Measuring Radiomics Feature Noise in 18-F-FDG PET Images: A multi-center study. Annual Congress of the European Association of Nuclear Medicine 2018, Eur J Nucl Med Mol Imaging (2018) 45 (Suppl 1): S43. DOI: 10.1007/s00259-018-4148-3

**Papp L**, Grahovac M, Spielvogel CP, Agha R, Mohamad D, Hamboeck M, Kenner L, Beyer T, Hacker M, Hartenbach M. Tumour-benign classification of PET-MRI radiomic features in prostate cancer patients with machine learning approaches. Annual Congress of the European Association of Nuclear Medicine 2018, Eur J Nucl Med Mol Imaging (2018) 45 (Suppl 1): S727. DOI: 10.1007/s00259-018-4148-3

**Papp L**, Nakuz T, Magometschnigg H, Grahovac M, Helbich T, Karanikas G, Haug A, Pinker K, Beyer T, Hacker M. In-vivo tumour characterization of breast cancer using [18F]FDG-PET/CT and supervised machine-learning. Annual Congress of the European Association of Nuclear Medicine 2017, Eur J Nucl Med Mol Imaging (2017) 44 (Suppl 2):S414. DOI: 10.1007/s00259-017-3822-1

**Papp L**, Pötsch N, Grahovac M, Schmidbauer V, Mitterhauser M, Wadsak W, Beyer T, Hacker M, Traub-Weidinger T. Survival prediction of Glioma based on the combined analysis of invivo [11C]Methionine -PET, ex-vivo and patient-characteristic features utilizing machine learning approaches. Annual Congress of the European Association of Nuclear Medicine 2017, Eur J Nucl Med Mol Imaging (2017) 44 (Suppl 2):S639. DOI: 10.1007/s00259-017-3822-1

**Papp L**, Nakuz TS, Magometschnigg H, Pinker K, Haug A, Helbich TH, Beyer T, Hacker M, Karanikas G. Breast cancer grading of 18F-FDG-PET/CT and patient-derived statistical features based on supervised machine-learning approaches. Annual Congress of the European Association of Nuclear Medicine 2016, Eur J Nucl Med Mol Imaging (2016) 43 (Suppl 1):S75. DOI: 10.1007/s00259-016-3484-4

**Papp L**, Hartenbach S, Duhovic A, Baltzer P, Rausch I, Beyer T, Susani M, Kenner L, Seitz C, Shariat S, Hacker M, Hartenbach M. Evaluation of primary prostate pathologies by large-scale analysis of non-invasive PET-MRI features with Machine-Learning approaches. Annual Congress of the European Association of Nuclear Medicine 2016, Eur J Nucl Med Mol Imaging (2016) 43 (Suppl 1):S150. DOI: 10.1007/s00259-016-3484-4

**Papp L**, Pötsch N, Mitterhauser M, Wadsak W, Beyer T, Hacker M, Traub-Weidinger T. Automated grading of Glioma based on MET-PET and patient-derived features utilizing multilayer machine learning approaches. Annual Congress of the European Association of Nuclear Medicine 2016, Eur J Nucl Med Mol Imaging (2016) 43 (Suppl 1):S193. DOI: 10.1007/s00259-016-3484-4

Bandi P, Zsoter N, Koncz P, Babos M, Hobor S, Mathe D, **Papp L**. Automated material map generation from MRI scout pairs for preclinical PET attenuation correction. In: 2012 Annual

International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2012. p. 5351–4. Available from: http://ieeexplore.ieee.org/document/6347203/

Bandi P, Zsoter N, Wirth A, Luetzen U, Derlin T, **Papp L**. New workflows and algorithms of bone scintigraphy based on SPECT-CT. In: 2012 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2012. p. 5971–4. Available from: http://ieeexplore.ieee.org/document/6347354/

Zsoter N, Bandi P, Szabo G, Toth Z, Bundschuh RA, Dinges J, **Papp L**. PET-CT based automated lung nodule detection. In: 2012 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2012. p. 4974–7. Available from: http://ieeexplore.ieee.org/document/6347109/

**Papp L**, Zsoter N, Bandi P, Barna S, Luetzen U. An extended registration framework for the triple registration of IBZM SPECT, DATSCAN SPECT and MRI brain images to support the evaluation of brain dopamine receptor scintigraphies. In: 2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2011. p. 8025–8. Available from: http://ieeexplore.ieee.org/document/6091979/

**Papp L**, Zsoter N, Loh C, Ole B, Egeler B, Garai I, et al. Automated lymph node detection and classification on breast and prostate cancer SPECT-CT images. In: 2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2011. p. 3431–4. Available from: http://ieeexplore.ieee.org/document/6090928/

Bandi P, Zsoter N, Seres L, Toth Z, **Papp L**. Automated patient couch removal algorithm on CT images. In: 2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2011. p. 7783–6. Available from: http://ieeexplore.ieee.org/document/6091918/

Zsoter N, Bandi P, Garai I, **Papp L**. Hextuple registration of interim and follow-up PET-CT images for the accurate tracking of patient recovery after therapy. In: 2011 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2011. p. 2630–3. Available from: http://ieeexplore.ieee.org/document/6090725/

**Papp L**, Zsoter N, Szabo G, Bejan C, Szimjanovszki E, Zuhayra M. Parallel registration of multimodal medical image triples having unknown inter-image geometry. In: 2009 Annual International Conference of the IEEE Engineering in Medicine and Biology Society [Internet]. IEEE; 2009. p. 5825–8. Available from: http://ieeexplore.ieee.org/document/5335168/

**Papp L**, Juhasz R, Travar S, Kolli A, Sorantin E. Automatic Detection and Characterization of Funnel Chest Based on Spiral CT. In: 2009 3rd International Conference on Bioinformatics and Biomedical Engineering [Internet]. IEEE; 2009. p. 1–4. Available from: http://ieeexplore.ieee.org/document/5162429/

## CO-AUTHOR | PEER-REVIEWED JOURNAL PUBLICATIONS (14)

Krajnc D, **Papp L**, Nakuz TS, Magometschnigg HF, Grahovac M, Spielvogel CP, Ecsedi B, Bago-Horvath Zs, Haug A, Karanikas G, Beyer T, Hacker M, Helbich TH, Pinker K. Breast Tumor Characterization Using [18F]FDG-PET/CT Imaging Combined with Data Preprocessing and Radiomics. Cancers (Basel) [Internet]. 2021;13(6). DIO: 10.3390/cancers13061249 https://www.mdpi.com/2072-6694/13/6/1249

Geist BK, Baltzer P, Fueger B, Hamboeck M, Nakuz T, **Papp L**, Rasul S, Sundar LKS, Hacker M and Staudenherz A. Assessing the kidney function parameters glomerular filtration rate and effective renal plasma flow with dynamic FDG-PET/MRI in healthy subjects. EJNMMI Res [Internet]. 2018 Dec 9;8(1):37. Available from:

https://ejnmmires.springeropen.com/articles/10.1186/s13550-018-0389-1

Cal-Gonzalez J, Rausch I, Shiyam Sundar LK, Lassen ML, Muzik O, Moser E, **Papp L** and Beyer T. Hybrid Imaging: Instrumentation and Data Processing. Front Phys [Internet]. 2018 May 18;6. Available from: https://www.frontiersin.org/article/10.3389/fphy.2018.00047/full

Werner RA, Lapa C, Ilhan H, Higuchi T, Buck AK, Lehner S, Bartenstein P, Bengel F, Schatka I, Muegge D, **Papp L**, et al. Survival prediction in patients undergoing radionuclide therapy based on intratumoral somatostatin-receptor heterogeneity. Oncotarget [Internet]. 2017 Jan 24;8(4):7039–49. Available from:

https://www.oncotarget.com/lookup/doi/10.18632/oncotarget.12402

Lützen U, Naumann CM, Marx M, Zhao Y, Jüptner M, Baumann R, **Papp L**, N. Zsoter, Grosse-Ophoff T, Essler M, Bundschuh RA. A study on the value of computer-assisted assessment for SPECT/CT-scans in sentinel lymph node diagnostics of penile cancer as well as clinical reliability and morbidity of this procedure. Cancer Imaging [Internet]. 2016 Dec 7;16(1):29. Available from: http://cancerimagingjournal.biomedcentral.com/articles/10.1186/s40644-016-0087-z

Werner RA, Kroiss M, Nakajo M, Mügge DO, Hahner S, Fassnacht M, Schirbel A, Bluemel C, Higuchi T, **Papp L**, N. Zsoter, Buck AK, Bundschuh RA, Lapa C. Assessment of tumor heterogeneity in treatment-naïve adrenocortical cancer patients using 18F-FDG positron emission tomography. Endocrine [Internet]. 2016 Sep 2;53(3):791–800. Available from: http://link.springer.com/10.1007/s12020-016-0970-1

Perlaki G, Szekeres S, Orsi G, **Papp L**, Suha B, Nagy SA, Doczi T, Janszky J, Zambo K, Kovacs N. Validation of an automated morphological MRI-based 123I-FP-CIT SPECT evaluation method. Parkinsonism Relat Disord [Internet]. 2016 Aug;29:24–9. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1353802016301973

Lapa C, Werner RA, Schmid J-S, **Papp L**, Zsótér N, Biko J, et al. Prognostic value of positron emission tomography-assessed tumor heterogeneity in patients with thyroid cancer undergoing treatment with radiopeptide therapy. Nucl Med Biol [Internet]. 2015 Apr;42(4):349–54. Available from:

https://linkinghub.elsevier.com/retrieve/pii/S096980511400571X

Salamon J, **Papp L**, Tóth Z, Laqmani A, Apostolova I, Adam G, et al. Nerve Sheath Tumors in Neurofibromatosis Type 1: Assessment of Whole-Body Metabolic Tumor Burden Using F-18-FDG PET/CT. Katoh M, editor. PLoS One [Internet]. 2015 Dec 1;10(12):e0143305. Available from: https://dx.plos.org/10.1371/journal.pone.0143305

Pyka T, Bundschuh RA, Andratschke N, Mayer B, Specht HM, **Papp L**, et al. Textural features in pre-treatment [F18]-FDG-PET/CT are correlated with risk of local recurrence and disease-specific survival in early stage NSCLC patients receiving primary stereotactic radiation

therapy. Radiat Oncol [Internet]. 2015 Dec 22;10(1):100. Available from: https://ro-journal.biomedcentral.com/articles/10.1186/s13014-015-0407-7

Bundschuh RA, Dinges J, Neumann L, Seyfried M, Zsoter N, **Papp L**, et al. Textural Parameters of Tumor Heterogeneity in 18F-FDG PET/CT for Therapy Response Assessment and Prognosis in Patients with Locally Advanced Rectal Cancer. J Nucl Med [Internet]. 2014 Jun 1;55(6):891–7. Available from:

http://jnm.snmjournals.org/cgi/doi/10.2967/jnumed.113.127340

Derlin T, Busch JD, Wisotzki C, Schoennagel BP, Bannas P, **Papp L**, et al. Intraindividual Comparison of 123I-mIBG SPECT/MRI, 123I-mIBG SPECT/CT, and MRI for the Detection of Adrenal Pheochromocytoma in Patients With Elevated Urine or Plasma Catecholamines. Clin Nucl Med [Internet]. 2013 Jan;38(1):e1–6. Available from: http://journals.lww.com/00003072-201301000-00023

Derlin T, Toth Z, **Papp L**, Wisotzki C, Apostolova I, Habermann CR, et al. Correlation of Inflammation Assessed by 18F-FDG PET, Active Mineral Deposition Assessed by 18F-Fluoride PET, and Vascular Calcification in Atherosclerotic Plaque: A Dual-Tracer PET/CT Study. J Nucl Med [Internet]. 2011 Jul 1;52(7):1020–7. Available from: http://jnm.snmjournals.org/cgi/doi/10.2967/jnumed.111.087452

Zuhayra M, Lützen U, Lützen A, **Papp L**, Henze E, Friedrichs G, et al. C–H Bond Activation of Coordinated Pyridine: Ortho-Pyridyl-Ditechnetiumhydridocarbonyl Metal Cyclus. Crystal Structure and Dynamic Behavior in Solution. Inorg Chem [Internet]. 2008 Nov 3;47(21):10177– 82. Available from: https://pubs.acs.org/doi/10.1021/ic8015063

Zuhayra M, Alfteimi A, **Papp L**, Lützen U, Lützen A, Von Forstner C, et al. Simplified fast and high yielding automated synthesis of [18F]fluoroethylcholine for prostate cancer imaging. Bioorg Med Chem [Internet]. 2008 Oct;16(20):9121–6. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0968089608008699

## **INVITED SPEAKS | MODERATIONS**

Invited lecture: L. Papp: "Data Preparation" | 1<sup>st</sup> September 2020 Invited lecture: L. Papp: "Predictive Model Establishment" | 2<sup>nd</sup> September 2020 1st Virtual Summer School on Radiomics and AI for Molecular Medicine | Institute for Applied Medical Physics (IFAMP) || 31<sup>st</sup> August – 2<sup>nd</sup> September 2020 | Virtual

Invited speak: L. Papp: "Al and Nuclear Medicine – Where do we stand?" Förderungen der OGNMB, 24<sup>th</sup> January, 2020 | Zell am See, Austria

Invited speak: L. Papp: "Al projects at the Medical University of Vienna" Digital Success Academy (DSA, Microsoft), 5<sup>th</sup> September 2019 | Rome, Italy

Moderator: "Leuchtturm Session: Radiomics", 04.04.2019, 14:00 - 15:30" German Nuclear Medicine Association (DGN) 2019 | Bremen, Germany

Invited speak: L. Papp "Künstliche Intelligenz in der Nuklearmedizin" Winterschule Pichl | Deutschen Gesellschaft für Medizinische Physik (DGMP), der Ö sterreichischen Gesellschaft für Medizinische Physik (ÖGMP) und der Schweizerischen Gesellschaft für Strahlenbiologie und Medizinische Physik (SGSMP) 5th March 2019 | Pichl, Austria