

BASHAR M A TAHAYNA, PhD

AI/ML Expert | Digital Media & Informatics Specialist | Academic Researcher

Email: bashar.tahayna@gmail.com | **Phone:** +601112927432 / +970594319999 **Date of Birth:** 24th June 1973 | **Citizenship:** Palestine | **Currently Based:** Faculty of Information and Communication Technology, University Tunku Abdul Rahman, Malaysia

Research Profile Links

Scopus Profile: <https://www.scopus.com/authid/detail.uri?authorId=25423146600>

Scopus h-index: 7 | **Scopus Citations:** 104

Google Scholar Profile: <https://scholar.google.com/citations?user=BFGJ0dsAAAAJ&hl=en> **Google Scholar h-index:** 8 | **Google Scholar Citations:** 163

ORCID ID: <https://orcid.org/0000-0002-7614-9720> **ResearchGate Profile:** <https://www.researchgate.net/profile/Bashar-Tahayna> **LinkedIn Profile:** <https://www.linkedin.com/in/tahayna/>

Education

Doctor of Philosophy (PhD) in Computer Science | October 2019 - May 2023
Universiti Tunku Abdul Rahman (UTAR), Malaysia
Specialization: **Multimodal AI and Machine Learning** (highly relevant to Digital Media, Content Creation, Media Analytics)
Dissertation: "A COHERENT KNOWLEDGE-DRIVEN DEEP LEARNING MODEL FOR IDIOMATIC- AWARE SENTIMENT ANALYSIS OF UNSTRUCTURED TEXT USING BERT TRANSFORMER" (directly applicable to Media Analytics and Content Creation)

Master of Science (MSc) in Media Informatics | 2004 - 2006 Rheinisch-Westfälische
Technische Hochschule Aachen, Germany
Specialization: **Media Informatics** (direct alignment with Applied Media disciplines)
CGPA: 3.5

Bachelor of Computer Science (BCs) | September 1994 - June 1998 An-Najah National University, Palestine Specialization: Computer Science CGPA: 80.4%

Professional Experience

Assistant Professor | Universiti Tunku Abdul Rahman (UTAR), Malaysia | July 2024 - Present - Research member of CloTBD research Centre focusing on IoT, **AI & Big Data** - Developing and delivering advanced computer science courses, including those with applications in **Digital Media** and **Media Analytics**. - Supervising postgraduate research students, including those in **Integrated Digital Media**. - Contributing to curriculum development and departmental initiatives.

Assistant Professor | Birzeit University, Palestine | August 2013 - July 2024 - Developed and delivered advanced computer science courses, with focus on **Artificial Intelligence** and **Image Processing**. - Supervised undergraduate final year projects, fostering **analytical and problem-solving skills**. - Participated in curriculum development and assessment.

Senior Lecturer (Adjunct) | Arab American University, Palestine | June 2007 - July 2024 - Taught specialized **New Media Technologies** courses. - Developed course materials and assessment methods for **Digital Media** related subjects. - Supervised graduate student projects, including those in the **Master Program in Integrated Digital Media**.

Technical Consultant | American Psychological Association apa.org | 2024 - Now - Responsible for APA's information technology strategy and operations, including core business systems development, with potential applications in **Digital Content Management**.

Senior Software Developer / Solution Architect | Financial Trading Company | 2018 - 2024 - Designed and implemented comprehensive FINTECH solutions, leveraging **data analysis** and **system integration** skills applicable to **Media Analytics**. - Led development teams using Agile methodologies. - Tools/Technologies: Agile methodologies, APIs, Web Services, DevOps practices.

Digital Transformation Consultant | The National Bank - Palestine | 2015 - 2018 - Spearheaded **digital transformation** initiatives, relevant to modern **Digital Media** strategies. - Developed and integrated fintech solutions. - Implemented Agile practices.

Technical Consultant | Palestinian Central Monetary Authority | 2013 - 2015 - Designed and implemented payroll and investment solutions, involving **data management** and **system integration**. - Ensured compliance with regulations and security standards. - Electronic Clearance & Real-Time Payments: Part of PMA's strategy to connect payment systems, reduce dependency on cash, and drive financial inclusion.

Research Publications

My research focuses on the intersection of Artificial Intelligence, Machine Learning, and their applications in media and digital content, contributing to areas such as **Media Analytics, Content Creation, and Digital Media**.

Journals

1. **Tahayna B.**, Ayyasamy R.K., “Applying English Idiomatic Expressions to Classify Deep Sentiments in COVID 19 Tweets” , *Computer Systems Science and Engineering*, 2023. ISI Impact Factor: 4.83, **Q2**, Scopus-indexed. (Relevant to **Media Analytics, Social Media**)
2. **Tahayna B.**, Ayyasamy R.K., Akbar R., “Automatic Sentiment Annotation of Idiomatic Expressions for Sentiment Analysis Task” , *IEEE Access*, 2022. ISI Impact Factor: 3.4, **Q1**, Scopus-indexed. (Relevant to **Media Analytics, Content Creation**)
3. **Tahayna B.**, Ayyasamy R.K., Akbar R. “Context-Aware Sentiment Analysis using Tweet Expansion Method” , *International Journal of ICT Research and Applications, JICTRA*, 2022. ISI Impact Factor: 1.09, **Q4**, Scopus-indexed. (Relevant to **Media Analytics, Digital Media**)
4. Belkhatir, M., **Tahayna B.** “Near-duplicate video detection featuring coupled temporal and perceptual visual structures and logical inference based matching,” *International Journal, Information Processing and Management, IPM*, 2011. ISI Impact Factor: 7.4, **Q1**, Scopus-indexed. (Relevant to **Media Production, Digital Media**)
5. **Tahayna B.**, Belkhatir, M., Alhashmi S.M., O’ Daniel, T. “Evolutionary optimization of video event classification” *International Journal of Computer Mathematics, IJCM*, 2011. ISI Impact Factor: 1.8, **Q2**, Scopus-indexed. (Relevant to **Media Production, Digital Media**)

Conferences

1. **Tahayna, B.**, Ayyasamy, R. K., Jalil, N. B. A., Sangodiah, A., Tahayna, L. N., & Krisnan, S. (2022, September). Disparity-aware Pandemic Response Classification by Fine-Tuning Transfer Learning Approach. In *2022 3rd International Conference on Artificial Intelligence and Data Sciences (AiDAS)* (pp. 25-28). IEEE. Scopus-indexed. (Relevant to **Media Analytics, Digital Media**)
2. **B. Tahayna**, M. Belkhatir, S. M. Alhashmi and T. O' Daniel, "Optimizing support vector machine based classification and retrieval of semantic video events with genetic algorithms," *2010 IEEE International Conference on Image Processing*, Hong Kong, China, 2010, pp. 1485-1488, doi: 10.1109/ICIP.2010.5653724. Scopus-indexed. (Relevant to **Image Processing, Digital Media**)
3. **B. Tahayna**, M. Belkhatir, S. M. Alhashmi and T. O' Daniel, "Combining content and context information for video events classification and retrieval," *6th International Conference on Digital Content, Multimedia Technology and its Applications*, Seoul, Korea (South), 2010, pp. 81-86. (Relevant to **Digital Media, Content Creation**)
4. **B. Tahayna**, M. Belkhatir, S. M. Alhashmi and T. O' Daniel, "Human action detection and classification using optimal bag-of-words representation," *6th International Conference on Digital Content, Multimedia Technology and its Applications*, Seoul, Korea (South), 2010, pp. 75-80. (Relevant to **Digital Media, 2D/3D Design**)
5. **Tahayna, B.**, Belkhatir, M., Alhashmi, S., & O' Daniel, T. (2010, July). Motion data-driven model for semantic events classification using an optimized support vector machine. In *Proceedings of the ACM International Conference on Image and Video Retrieval* (pp. 296-302). (Relevant to **Digital Media, Media Production**)
6. **Tahayna, B.**, Alhashmi, S., Wang, Y., & Abbas, K. (2010, July). Combining content and context information fusion for video classification and retrieval. In *2010 2nd International Conference on Signal Processing Systems* (Vol. 2, pp. V2-600). IEEE. (Relevant to **Digital Media, Content Creation**)
7. **Tahayna, B.**, Ayyasamy, R. K., Alhashmi, S., & Eu-Gene, S. (2010, June). A novel weighting scheme for efficient document indexing and classification. In *2010 International Symposium on Information Technology* (Vol. 2, pp. 783-788). IEEE. (Relevant to **Media Analytics, Digital Media**)

8. **Tahayna, B.**, Alashmi, S. M., Belkhatir, M., Abbas, K., & Wang, Y. (2010). Unifying content and context similarities of the textual and visual information in an image clustering framework. In *Advances in Multimedia Information Processing-PCM 2010: 11th Pacific Rim Conference on Multimedia*, Shanghai, China, September 21-24, 2010, Proceedings, Part I 11 (pp. 515-526). Springer Berlin Heidelberg. (Relevant to **Digital Media, Content Creation**)
9. **Tahayna, B.**, & Belkhatir, M. (2008). An Efficient Method for Near-Duplicate Video Detection. In *Advances in Multimedia Information Processing-PCM 2008: 9th Pacific Rim Conference on Multimedia*, Tainan, Taiwan, December 9-13, 2008. Proceedings 9 (pp. 377-386). Springer Berlin Heidelberg. (Relevant to **Media Production, Digital Media**)
10. **B. Tahayna**, M. Belkhatir and S. Alhashmi, "Automatic indexing and recognition of re-broadcasted video programs through visual and temporal features," *2008 IEEE International Conference on Multimedia and Expo*, Hannover, Germany, 2008, pp. 861-864, doi: 10.1109/ICME.2008.4607571. Scopus-indexed. (Relevant to **Media Production, Digital Media**)
11. **Tahayna, B.**, Belkhatir, M., & Wang, Y. (2009). Clustering of Retrieved Images by Integrating Perceptual Signal Features within Keyword-Based Image Search Engines. In *Advances in Multimedia Information Processing-PCM 2009: 10th Pacific Rim Conference on Multimedia*, Bangkok, Thailand, December 15-18, 2009 Proceedings 10 (pp. 956-961). Springer Berlin Heidelberg. (Relevant to **Digital Media, Content Creation**)
12. Ayyasamy, R. K., **Tahayna, B.**, Subramaniam, S., Tan, F. J., Krisnan, S., & Tahayna, L. N. (2022, September). Design and implementation of residential rental rates forecast model using data mining algorithms. In *2022 3rd International Conference on Artificial Intelligence and Data Sciences (AiDAS)* (pp. 176-181). IEEE. (Relevant to **Media Analytics**)
13. **Tahayna, B.**, Ayyasamy, R. K., Akbar, R., Subri, N. F. B., & Sangodiah, A. (2022, September). Lexicon-based non-compositional multiword augmentation enriching tweet sentiment analysis. In *2022 3rd International Conference on Artificial Intelligence and Data Sciences (AiDAS)* (pp. 19-24). IEEE. (Relevant to **Media Analytics, Social Media**)
14. **B. Tahayna**, M. Belkhatir and S. Alhashmi, "Motion information for video retrieval," *2009 IEEE International Conference on Multimedia and Expo*, New York, NY, USA, 2009, pp. 870-873, doi: 10.1109/ICME.2009.5202633. Scopus-indexed. (Relevant to **Media Production, Digital Media**)

15. Wang, Y., Belkhatir, M., & **Tahayna, B.** (2012, October). Near-duplicate video retrieval based on clustering by multiple sequence alignment. In *Proceedings of the 20th ACM international conference on Multimedia* (pp. 941-944). (Relevant to **Media Production, Digital Media**)
16. Maree, M., Alhashmi, S. M., Belkhatir, M., Hidayat, H., & **Tahayna, B.** (2010). Multi-search: a meta-search engine based on multiple ontologies. In *Information Retrieval Technology: 6th Asia Information Retrieval Societies Conference, AIRS 2010*, Taipei, Taiwan, December 1-3, 2010. Proceedings 6 (pp. 110-120). Springer Berlin Heidelberg. (Relevant to **Digital Media, Content Creation**)
17. Ayyasamy, R., Alhashmi, S., Siew, E-G., & **Tahayna, B.** (2011). Optimizing fuzzy clustering with fuzzy similarity for blog classification. In V. V. Das, E. Ariwa, & S. B. Rahayu (Eds.), *Proceedings of International Conference on Recent Trends in Information Processing & Computing - IPC* (pp. 72 - 77). Springer. (Relevant to **Media Analytics, Social Media**)
18. Ayyasamy, R. K., Alhashmi, S. M., Eu-Gene, S., & **Tahayna, B.** (2011). Enhancing concept based modeling approach for blog classification. In *Knowledge Engineering and Management: Proceedings of the Sixth International Conference on Intelligent Systems and Knowledge Engineering*, Shanghai, China, Dec 2011 (ISKE2011) (pp. 409-416). Springer Berlin Heidelberg. (Relevant to **Media Analytics, Content Creation**)
19. Ayyasamy, R.K., Alhashmi, S.M., Eu-Gene, S., **Tahayna, B.** (2011). Clustering Blogs Using Document Context Similarity and Spectral Graph Partitioning. In: Wang, Y., Li, T. (eds) *Knowledge Engineering and Management. Advances in Intelligent and Soft Computing*, vol 123. Springer, Berlin, Heidelberg. (Relevant to **Media Analytics, Social Media**)
20. Ayyasamy, R. K., Alhashmi, S. M., Eu-Gene, S., & **Tahayna, B.** (2011). Enhancing automatic blog classification using concept-category vectorization. In *Knowledge Engineering and Management: Proceedings of the Sixth International Conference on Intelligent Systems and Knowledge Engineering*, Shanghai, China, Dec 2011 (ISKE2011) (pp. 487-497). Springer Berlin Heidelberg. (Relevant to **Media Analytics, Content Creation**)
21. R. K. Ayyasamy, **B. Tahayna**, S. Alhashmi, S. Eu-gene and S. Egerton, "Mining Wikipedia Knowledge to improve document indexing and classification," *10th International Conference on Information Science, Signal Processing and their Applications (ISSPA 2010)*, Kuala Lumpur, Malaysia, 2010, pp. 806-809, doi: 10.1109/ISSPA.2010.5605508. (Relevant to **Digital Media, Content Creation**)

Teaching Experience

My teaching experience spans both undergraduate and postgraduate levels, with a strong emphasis on subjects foundational to **Digital Media, AI in Media, and Media Analytics**.

Undergraduate Courses Taught

- **Artificial Intelligence** (Core to Media Analytics, Content Creation)
- **Image Processing** (Essential for 2D/3D Design, Media Production)
- **Object-Oriented Programming** (Foundational for Interactive Design, Digital Media)
- Software Engineering
- Operating Systems
- Database Management Systems
- Ethical Hacking
- Distributed Systems
- Blockchain Technology

Postgraduate Courses Taught

- **Advanced Artificial Intelligence** (Applied to various media contexts)
- **Machine Learning Applications** (Crucial for Media Analytics, Content Creation)
- **Natural Language Processing** (Key for Content Creation, Media Analytics, Journalism)
- **Computer Vision** (Vital for 2D/3D Design, Immersive Technology, Media Production)

Technical Skills and Tools

Proficient in a wide range of tools and technologies critical for **Applied Media, Digital Content Creation, and Media Analytics**.

AI/ML Frameworks & Tools: TensorFlow, PyTorch, Scikit-learn, Keras (Essential for **Media Analytics, Content Creation, Immersive Technology**) **Data Analysis & Visualization:** Python, R, SPSS, Matplotlib, Seaborn, Tableau (Crucial for **Media Analytics, Data-driven Content Creation**) **Programming Environments:** Visual Studio Code, PyCharm, Eclipse (Relevant for **Interactive Design, Digital Media Development**) **Cloud Platforms:** AWS, Google Cloud (Scalable solutions for **Digital Media infrastructure**) **Big Data Tools:** Hadoop, Spark (Handling large datasets for **Media Analytics**) **Development Tools:** Jupyter Notebook, Google Colab **Version Control:** Git, GitHub **Learning Management Systems:** Moodle, Google Classroom **Virtual Learning Platforms:** Zoom, Microsoft Teams **Project Management:** Jira, Confluence **Database Systems:** MySQL, PostgreSQL

Research Grants and Consultancy Projects

My project experience demonstrates a strong ability to apply advanced technologies to real-world problems, including those relevant to **Applied Media**.

Aesthetic Visualization for Learning Science (2010-2011) - Type: Research Project - Organizations Involved: University of Malaya - Project Description: Developed **AI-driven measures** for assessing interactive and immersive education applications, relevant to **Immersive Technology** and **Interactive Design**. - Role: Technical Team Lead

Generic/Natural Language Expert System for Robotics (2010-2013) - Type: Research Project - Organizations Involved: [List organizations] - Project Description: Designed novel Expert System architecture integrating **natural language and multimedia interfaces**, directly applicable to **Content Creation** and **Digital Media**. - Role: Project Manager

Palestine Education Initiative (2006-2007) - Type: Research Project - Organizations Involved: Ministry of Higher Education Palestine - Project Description: Contributed to **AI-powered e-learning portals**, showcasing experience in **Digital Media** and **Content Creation** for educational purposes. - Role: Software Developer

Applied for UTAR Research Fund (2025) - Project Title: Enhanced Privacy and Efficiency in Federated Learning through Personalized Model Aggregation and Communication Optimization - Type: Research Grant - Funding Organization: UTAR - Amount: 100K MYR - Status: Under Review

Postgraduate Supervision

My supervision experience includes guiding students in research directly relevant to **Integrated Digital Media, Media Analytics, and Digital Content**.

Master's Students

- 1. Student:** Ramez Jaber **University:** Arab American University, **Department of Media and Communication, Master Program in Integrated Digital Media** **Title:** "Design Thinking Empathy Maps for Enhancing Customer Experience in Palestinian Retail" (Relevant to **Interactive Design, Digital Media**) **Status:** Submitted **Role:** Main Supervisor (2024-Present)
- 2. Student:** Yehya Abu Asab **University:** Arab American University, **Department of Media and Communication, Master Program in Integrated Digital Media** **Title:** "Exploring the Semiotic Role of Audience Empathy in Recognizing Emotions in Levantine-Arabic Vocal Media Content" (Relevant to **Media Analytics, Content Creation**) **Status:** In Progress **Role:** Co-Supervisor (2024-Present)
- 3. Student:** Talha Rehan **University:** Universiti Tunku Abdul Rahman **Title:** "Multi-modal machine learning framework for early PPD detection" (Relevant to **Media Analytics, Digital Media**) **Status:** In Progress **Role:** Main Supervisor

Professional Achievements & Recognition

- Member, MBOT Malaysia Board of Technologists (GRADUATE TECHNOLOGIST)

Certifications

- Microsoft Certified Technology Specialist (MCTS)
- Certified Internet Marketing Practitioner
- Microsoft Certified Technology Specialist: SharePoint 2010, Configuration
- Microsoft Certified Technology Specialist: SharePoint 2010, Application Development

Languages

- Arabic (Native)
- English (Full Professional)
- German (Limited Working)

Professional Memberships

- Member, Faculty Research and Development Committee, UTAR
- Member, Centre for IoT & Big Data, UTAR