

# 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 CIoTBD 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](https://www.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