

PHATTANAPON RHIENMORA

Office Address

School of Science and Technology
Bangkok University (City Campus)
Phra Khanong, Khlong Toei
Bangkok 10110, Thailand
Email: phattanapon.r@bu.ac.th
Homepage: www.patresearch.com

Home Address

99/75 Soi Ramindra 65
Taraeng, Bangkhen
Bangkok 10230, Thailand
Mobile: +66 8 6621 1325

CURRENT POSITION

Associate Dean for Administrative Affairs
School of Science and Technology, Bangkok University, Thailand

Director: Artificial Intelligence and Virtual Environments (ALIVE) Laboratory

Director: Information Technology and Management graduate program

RESEARCH INTERESTS

The main research interests focus on virtual reality, artificial intelligence, medical and dental informatics, intelligent tutoring system, and haptics.

ACADEMIC DEGREES

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| Ph.D. (Computer Science) | 2012 |
| School of Engineering and Technology, Asian Institute of Technology Dissertation – Virtual Reality Intelligent Dental Skill Trainer | |
| Master of Engineering (Computer Science) | 2004 |
| School of Advanced Technologies, Asian Institute of Technology Thesis – Personal Intelligent Spam Filter | |
| Bachelor of Engineering (Computer Engineering) | 2000 |
| Faculty of Engineering, Kasetsart University Senior Project – Network Seminar | |

AWARDS AND HONORS

- Gold medal – Seoul International Invention Fair (SIIF) 2012
- Inventor award – National Research Council of Thailand 2012
- Grand prize – Video Research Competition, AIT 2011
- Best paper award – South East Asia Association for Dental Education 2009
- Conference participation grant – AIT Alumni Association 2009

- Gold medal – World Cup of Computer Implemented Invention, International Federation of Inventor Association (IFIA) 2008
- Special award for the best invention – Malaysian Invention and Design Society 2008
- Royal Thai Government Fellowship 2006

RESEARCH PROJECTS / GRANTS

- Global Research Benchmarking System (GRBS)** 2010 – 2013
 Led by the United Nations University and the Center for Measuring University Performance, GRBS provides objective data and analytics to help universities benchmark their research activities for the purpose of strengthening the quality and increasing the impact of research.
- Development and Evaluation of a Virtual Reality Simulator Using Computed Tomography Models and Dental Surgery Preoperative Planning** 2011 – 2012
 – Thailand Research Fund (No. MRG5480204) – 480,000 Baht
- Intelligent Virtual Reality Haptic Device for Clinical Dentistry** 2007 – 2008
 – National Electronics and Computer Technology Center (No. NT-B-22-MS-14-50-04) – 1,550,000 Baht
- A Collaborative Intelligent Tutoring System for Medical Problem-Based Learning** 2004 – 2005
 – Royal Thai Government Joint Research Project – 942,500 Baht

RESEARCH / TEACHING EXPERIENCES

- Lecturer** 2014 – Present
 School of Science and Technology, Bangkok University, Thailand
 – Courses: Artificial Intelligence, Human-computer Interaction
- Postdoctoral Fellow** 2012 – 2013
 United Nations University International Institute for Software Technology
 – Global Research Benchmarking System
- Doctoral Research** 2007 – 2012
 School of Engineering and Technology, Asian Institute of Technology (Funded by the National Electronics and Computer Technology Center)
 – Virtual Reality Intelligent Dental Skill Trainer
- Guest Lecturer** 2010, 2011
 Human Computer Interaction class, Asian Institute of Technology
 – Haptics and Augmented Reality
- Research Assistant** 2006
 School of Engineering and Technology, Asian Institute of Technology
 – Collaborative Case Authoring Tool for COMET

PROFESSIONAL ACTIVITIES

- Editorial Board – Journal of the Thai Medical Informatics Association
- Program Committees – 6th, 7th, 8th Multi-Disciplinary International Workshop on Artificial Intelligence
- Reviewer – Journal of Medical Internet Research
- Reviewer – Methods of Information in Medicine
- Reviewer – Computer Methods in Biomechanics and Biomedical Engineering
- Reviewer – Journal of Computing and Information Science in Engineering
- Reviewer – Journal of Dental Education
- Reviewer – 11th, 12th, 13th Conference on Artificial Intelligence in Medicine
- Reviewer – 5th Thailand-Japan International Academic Conference
- Workshop – Intelligent Virtual Reality Haptic Device for Clinical Dentistry, Ministry of Science and Technology, 2009

PATENTS

- Intelligent Virtual Reality for Dental Skill Training

MEDIA COVERAGES

- Dental Tribune Magazine (Opinions section) 2013
– Computerised Dental Trainers are Coming Closer to Simulating Actual Teeth
- Thai Television Channel 7, News Program (New Invention section) 2011
– Haptic Virtual Reality for Dental Clinical Practice
- National Broadcast Television Channel, Morning News Program 2011
– DentSim-VR: Intelligent Clinical Training System for Dentistry

TALKS / PRESENTATIONS

- Virtual Reality for Acrophobia Exposure Therapy – VR/AR: The Future of Technology at C-Asean 2016
- Applications of Virtual Reality in Education – Rajamangala University of Technology Isan 2016
- Virtual Reality Research – Digital Pavilion, National Science and Technology Fair 2011
- Haptic Augmented Reality for Dental Training – National Science and Technology Fair 2010
- Virtual Reality Dental Training Simulator – National Science and Technology Fair 2009
- Intelligent Virtual Reality for Clinical Skill Training – NSTDA Annual Conference 2008

PROFESSIONAL SOCIETY MEMBERSHIPS

- Association for Computing Machinery (ACM)
- IEEE Technical Committee on Haptics
- Special Interest Group on Haptics (Haptics SIG)
- Thai Medical Informatics Association
- Thai Biomedical Engineering Research Association

PUBLICATIONS

Journal Articles

Suebnuakarn, S., Chaisombat, M., Kongpunwijit, T., & Rhienmora, P. (2014). Construct validity and expert benchmarking of the haptic virtual reality dental simulator. *Journal of Dental Education*, 78(10).

Suebnuakarn, S., Rhienmora, P., & Haddawy, P. (2012). The Use of Cone-beam Computed Tomography and Virtual Reality Simulation for Pre-surgical Practice in Endodontic Microsurgery. *International Endodontic Journal*, 45 (7).

Suebnuakarn, S., Hataidechadusadee, R., Suwannasri, N., Suprasert, N., Rhienmora, P., & Haddawy, P. (2011). Access Cavity Preparation Training Using Haptic Virtual Reality and Microcomputed Tomography Tooth Models. *International Endodontic Journal*, 44 (11).

Rhienmora, P., Haddawy, P., Suebnuakarn, S., & Dailey, M. N. (2011). Intelligent Dental Training Simulator with Objective Skill Assessment and Feedback. *Artificial Intelligence in Medicine*, 52 (2).

Suebnuakarn, S., Haddawy, P., Rhienmora, P., Jittimane, P., & Viratket, P. (2010). Augmented Kinematic Feedback from Haptic Virtual Reality for Dental Skill Acquisition. *Journal of Dental Education*, 74 (12).

Rhienmora, P., Haddawy, P., Khanal, P., Suebnuakarn, S., & Dailey, M. N. (2010). A Virtual Reality Simulator for Teaching and Evaluating Dental Procedures. *Methods of Information in Medicine*, 49 (4).

Suebnuakarn, S., Haddawy, P., Rhienmora, P., & Gajananan, K. (2010). Haptic Virtual Reality for Skill Acquisition in Endodontics. *Journal of Endodontics*, 36 (1).

Suebnuakarn, S., Phattanasatheinkul, N., Sombatveroj, S., Rhienmora, P., & Haddawy, P. (2009). Process and Outcome Measures of Expert /Novice Performance on a Haptic Virtual Reality System. *Journal of Dentistry*, 37 (9).

Rhienmora, P., Haddawy, P., Dailey, M. N., Khanal, P., & Suebnuakarn, S. (2008). Development of a Dental Skills Training Simulator Using Virtual Reality and Haptic Device. *NECTEC Technical Journal*, 8 (20).

Suebnuakarn, S., Haddawy, P., & Rhienmora, P. (2008). A Collaborative Medical Case Authoring Environment Based on the UMLS. *Journal of Biomedical Informatics*, 41 (2).

Book Chapters

Rhienmora, P., Haddawy, P., Suebnuakarn, S., & Dailey M.N. (2009). Providing Objective Feedback on Skill Assessment in a Dental Surgical Training Simulator. In Carlo Combi, Yuval Shahar, Ameen Abu-Hanna (Eds.): *Artificial Intelligence in Medicine*, 12th Conference on Artificial Intelligence in Medicine, AIME'09, Verona, Italy, *Lecture Notes in Artificial Intelligence*, ISBN 978-3-642-02975-2.

Conference Papers

Yin, M. S., Haddawy, P., Suebnuakarn, S., & Rhienmora, P. (2016). Toward Intelligent Tutorial Feedback in Surgical Simulation: Robust Outcome Scoring for Endodontic Surgery. In *Proceedings of the 21st International Conference on Intelligent User Interfaces*. California, USA.

Rhienmora, P., Haddawy, P., Suebnuakarn, S., Shrestha, P., & Dailey, M. N. (2015). Recognizing Clinical Styles in a Dental Surgery Simulator. In *Proceedings of the 15th World Congress on Health and Biomedical Informatics (MEDINFO 2015)*. São Paulo, Brazil.

Rhienmora, P., Gajananan, K., Haddawy, P., Dailey, M.N., & Suebnuakarn, S. (2010). Augmented Reality Haptics System for Dental Surgical Skills Training. In *Proceedings of the 17th ACM Symposium on Virtual Reality Software and Technology (VRST 2010)*. Hong Kong, China.

Rhienmora, P., Gajananan, K., Haddawy, P., Suebnuakarn, S., Dailey, M.N., Supataratarn, E., & Shrestha, P. (2010). Haptic Augmented Reality Dental Trainer with Automatic Performance Assessment. In *Proceeding of the 14th International Conference on Intelligent User Interfaces (IUI 2010)*. Hong Kong, China.

Rhienmora, P., Haddawy, P., Suebnuakarn, S., & Dailey M.N. (2009). A VR Environment for Assessing Dental Surgical Expertise. In *Proceedings of the 14th International Conference on Artificial Intelligence in Education (AIED 2009)*. Brighton, UK.

Suebnuakarn, S., Rhienmora, P., & Haddawy, P. (2007). A Collaborative Medical Case Authoring Environment Based on UMLS. In *Proceedings of the 7th IEEE International Conference on Advanced Learning Technologies (ICALT 2007)*. Niigata, Japan.

Abstracts

Suebnuakarn, S., Haddawy, P., Rhienmora, P., Jittimane, P., Viratket, P. (2010). Augmented feedback from haptic virtual reality for dental skill acquisition. The 88th IADR General Session & Exhibition. Barcelona, Spain.

Suebnuakarn, S., Haddawy, P., Rhienmora, P., & Gajananan, K. (2009). Haptic virtual reality for clinical skill acquisition. In *Proceedings of the 20th South East Asia Association for Dental Education (SEAADE) Annual Scientific Meeting*. Chiang Mai, Thailand.

Suebnuarn, S., Phattanasatheinkul, N., Sombatveroj, S., Rhienmora, P., Khanal, P., Haddawy, P., Dailey, M.N. (2009). A Process-Outcome Study of Expert and Novice Clinical Performance. *The 87th IADR General Session & Exhibition*. Miami, USA.

Rhienmora, P., Haddawy, P., Dailey, M. N., Khanal, P., & Suebnuarn, S. (2008). Development of a Dental Skills Training Simulator Using Virtual Reality and Haptic Device. *NECTEC Annual Conference & Exhibition (NECTEC-ACE 2008)*. Bangkok, Thailand.