








# Titipat Achakulvisut

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PERSONAL INFORMATION	PhD Candidate Department of Biomedical Engineering Northwestern University and Rehabilitation Institute of Chicago 345 E Superior St. Room 1479 Chicago, IL, USA 60611	☎ (224) 999-3633 ✉ titipat.a@u.northwestern.edu 🐱 <a href="https://github.com/titipata">https://github.com/titipata</a> 📄 <a href="https://tupleblog.github.io">https://tupleblog.github.io</a>
INTERESTS	Machine Learning, Text Mining, Signal Processing, Adaptive Filtering, Optimization, Computational Neuroscience, Control Systems	
EDUCATION	<b>Northwestern University</b> , Evanston, IL, USA Ph.D., Biomedical Engineering	2015 – Present (GPA 3.95/4.0)
	<b>Northwestern University</b> , Evanston, IL, USA M.S., Biomedical Engineering	2013 – 2015
	<b>Chulalongkorn University</b> , Bangkok, Thailand B.Eng, Electrical Engineering <i>First Class Honors</i>	2008 – 2012 (GPA 3.87/4.0)
	<b>Suankularb Wittayalai School</b> , Bangkok, Thailand Secondary School, Math & Science Program	2003 – 2008 (GPA 3.98/4.0)
AWARDS & FELLOWSHIPS	Microsoft Azure Research Award \$20,000 2 <sup>nd</sup> place, data visualization challenge Northwestern University Computational Research day, <i>World's science map</i> Royal Thai Government Scholarship, Ministry of Science and Technology Outstanding Academic Performance in Engineering Nominated candidate for the Ananda Mahidol Scholarship SCG Innovative Suggestion Award <i>Measure Lubricant Quality using Dielectric Constant</i> First place in Mathematics Entrance Exam ONET, National Institute of Education Testing Service, Thailand	2015 – 2016 2015 2012 – present 2008 – 2012 2012 2011 2008
RESEARCH EXPERIENCE	<b>Master's Research</b> <i>Bayesian Behavior Laboratory</i> <i>Rehabilitation Institute of Chicago (RIC), Northwestern University</i> <i>Advisor: Konrad Kording</i> <i>Research: A fast content-based recommendation system for scientific publications</i> <b>Research Intern</b> <i>AIM Laboratory, Department of Biomedical Engineering</i> <i>Mahidol University, Salaya, Thailand</i> <b>Undergraduate Research/ Research Assistant</b> <i>DSPRL Laboratory, Department of Electrical Engineering</i> <i>Chulalongkorn University, Bangkok, Thailand</i> <i>Advisor: Nisachon Tangsangiumvisai</i> <i>Research: Adaptive Filter and Noise Reduction Algorithm</i>	2014 – 2015    August 2012 – August 2013  2011 – 2012

TALK	Data visualization judging panel, Northwestern Computational Research day	April 2016
	Invited talk at HAMLET group, University of Wisconsin at Madison	March 2016
	Invited talk at ChiPy (Chicago Python community), Bank of America	February 2016
	Invited talk at Knowledge Lab, University of Chicago	November 2015
	Invited talk at SONIC lab, Northwestern University	April 2015
JOURNAL ARTICLE	T. Achakulvisut, D. E. Acuna, T. Ruangrong, K. P. Kording, <i>Science Concierge: A fast content-based recommendation system for scientific publications</i> (in press, PLOS ONE, see on  )	
PUBLICATIONS	D. E. Acuna, T. Achakulvisut, K. P. Kording <i>How to visit 0.5% of 15,000 possible posters? Automated poster visit scheduler for SfN</i> Society for Neuroscience conference (see <a href="http://www.scholarfy.net">www.scholarfy.net</a> )	October 2015
	D. E. Acuna, T. Achakulvisut, K. P. Kording <i>Website for Automatic Reviewer Assignment and Manuscript Scoring</i> Science of Team Science conference (see <a href="http://pr.scienceofscience.org">pr.scienceofscience.org</a> )	June 2015
PATENT	Konrad Kording, Daniel E. Acuna, Titipat Achakulvisut. <i>Data Butler</i> . U.S. Provisional Patent Application No. 62/218,998, filed September 15, 2015 (assignee Rehabilitation Institution of Chicago)	2015
MEDIA	PLOS Blogs, #PLOS #SfN15 preview: build your itinerary with this great new tool (see article)	
PROJECTS	<b>Scholarfy - content-based recommendation for MEDLINE dataset</b> <i>Recommendation system web application to search 14.3 millions publications from MEDLINE dataset</i> (ongoing project, see <a href="http://pubmed.scholarfy.net">pubmed.scholarfy.net</a> )	
	<b>Disambiguation of grant and publication datasets</b> <i>Applying disambiguation algorithm to disambiguate institutions and authors from disparate dataset including MEDLINE, NIH and NSF grant datasets</i> (ongoing project, see on  )	
	<b>Pubmed Parser</b> <i>Python XML parser for Pubmed Open-Access Subset XML Dataset and MEDLINE XML</i> (see on  )	
	<b>Breast cancer pathology extractor</b> <i>Framework to structure information from text-free breast cancer pathology reports and progress notes</i> (see on  )	
	<b>pyglmnet</b> <i>A python implementation of elastic-net regularized generalized linear models</i> (main contributor, see on  )	
	<b>Neural Event Reconstruction and Detection via Sparsity (NERDS)</b> <i>Matlab package implementing blind deconvolution method for neural spike recovery from calcium signal. Implementation of algorithm invented by E. L. Dyer</i> (see on  )	
	<b>Optimal Control of Thrust-Vectored Hovering Rocket</b> <i>Simulation of projection-based optimal control of non-linear system in Mathematica. This was the final project in an Optimal Control of Nonlinear Systems class taught by Prof. Todd Murphey</i> (see on  )	
	<b>Lagrangian Mechanics of Trapezoidal Box with Movable Link</b> <i>Simulation of a complex dynamical system including impact using Lagrangian mechanics method in Mathematica. This was the final class project in Theory of Machine Dynamics taught by Prof. Todd Murphey</i>	

**Framework for Brain Image Segmentation using modified Fuzzy C-Means Clustering Algorithm**

*Research assistant under the supervision of Assoc. Prof. Panrasee Ritthipravat at AIM Laboratory. This project included a collaboration with Zaw Htet Aung and Tulakarn Ruangrong from the class project Intelligence Systems and Biomedical Signal Processing class project*

**A Noise Reduction Technique for Hands-Free Telephony in a Car Environment, M-Max LMS Adaptive Algorithm in Hands-Free Telephony**

*Senior Projects at Digital Signal Processing Research Laboratory (DSPRL) under the supervision of Assoc. Prof. Nisachon Tangsangiumvisai*

MEMBERSHIP	Member of the McCormick Graduate Leadership Council , Northwestern U.	2014 – 2015
	IEEE Student Membership	2011 – 2015
	Member of the Engineering Students Academic Club	2008 – 2011
	Member of the Engineering Light and Sound Club	2008 – 2011
	Vice president of the Suankularb Buddhist Club	2007 – 2008
	Member of the Suankularb Chorus Club	2006 – 2007
SELECTED EXTRACURRICULAR ACTIVITIES	<b>Summer School in Computational Sensory-Motor Neuroscience (CoSMo)</b>	2014
	<b>Brain Fair</b>	2014
	<i>Volunteered with Northwestern University Brain Awareness Outreach (NUBAO) educating Chicago community about the brain</i>	
	<b>Chulalongkorn University Open House</b>	2012
	<b>Volunteer with the Flood Relief Project</b>	2011
	<i>Checked electrical damages in flooded house and collect refugee's data using RFID device at Chulalongkorn University flood evacuation center</i>	
	<b>Head of Educational Parts, NECTEC Electronics Camp</b>	2010
	<i>Taught basic electronics and circuit theory using laboratory experiments</i>	
	<b>Member of the Funfueng Camp</b>	2008 – 2010
COMPUTER SKILLS	<i>Tutored Mathematics and Natural Sciences to students in remote areas of Thailand</i>	
	<b>Head of Freshmen Tutorial Project</b>	2009
	<i>Recruited engineering tutors for Calculus, Physics, Chemistry, and Basic Computer Programming (I was also a tutor from 2008 – 2012)</i>	
	<b>Staff of Chulalongkorn University Freshmen Orientation Camp</b>	2009
	<b>Physics Olympiad Camp</b>	2006 – 2007
COMPUTER SKILLS	<b>Programming and Scripting Languages:</b>	
	<i>Advanced:</i> Python (NumPy, scikit-learn, pandas), Apache Spark, MATLAB, Mathematica	
	<i>Intermediate:</i> Julia, HTML, CSS, JavaScript, Java, R, C, AngularJS, Scala	
	<b>Others:</b> L <sup>A</sup> T <sub>E</sub> X, Emacs, Git, Adobe Illustrator, Microsoft Office	
	<b>Cloud Computing:</b> Amazon EC2, Google Cloud Computing, Microsoft Azure	
COMPUTER SKILLS	<b>Operating Systems:</b> Mac OS X, Linux, Windows	
LANGUAGES	Thai (Native), English (Proficient)	