# Asterios Toutios, PhD

*Los Angeles, CA*
*(213) 344-9509*
*toutios@gmail.com*
*toutios.com*

## Education

**University of Macedonia, Thessaloniki, Greece**

2007 *PhD in Applied Informatics*

- Thesis topic: Machine learning for inferring articulation from the speech signal
- Advisor: Konstantinos Margaritis

2002 *MSc in Information Systems*

- Thesis topic: Neural network-based speaker recognition

1999 **Aristotle University of Thessaloniki**

*Diploma/MEng in Electrical and Computer Engineering*

- Thesis topic: Computer-generated holography

## Professional History

**University of Southern California**

7/2017 - 6/2021 *Research Assistant Professor of Electrical and Computer Engineering*

6/2012-6/2017 *Research Associate, Signal Analysis and Interpretation Laboratory (SAIL)*

5/2011-6/2012 **CNRS LTCI; TELECOM ParisTech**, *Postdoctoral Research Associate*

**LORIA, Nancy France**

11/2009 - 4/2011 *Université Nancy 2 Postdoctoral Research Associate*

9/2007 - 6/2009 *INRIA Postdoctoral Research Associate*

## Teaching Experience

2004 - 2006 **University of Macedonia, Thessaloniki, Greece**

*Teaching Assistant, Dept. of Applied Informatics*

- Courses: Digital Systems; Distributed Systems; Parallel Processing.

2004 - 2005 **Technological Educational Institute of Serres, Greece**

*Laboratory Associate, Dept. of Informatics and Communications*

- Courses: Computer Architecture; Numerical Analysis.

## Awards and Honors

2016 **Interspeech Best Student Paper Award** (Awarded to Tanner Sorensen)

Tanner Sorensen, Asterios Toutios, Louis Goldstein, Shrikanth Narayanan, *Characterizing vocal tract dynamics across speakers using real-time MRI.*

2015 **ISMRM Magna cum Laude Merit Award**

Sajan Goud Lingala, Yinghua Zhu, Yoon-Chul Kim, Asterios Toutios, Shrikanth Narayanan, Krishna Nayak, *High spatio-temporal resolution multi-slice real time MRI of speech using golden angle spiral imaging with constrained reconstruction, parallel imaging, and a novel upper airway coil.*

2003 **HRAKLEITOS Scholarship**

Awarded, after a national competition, a full dissertation scholarship from the Greek research program HERAKLEITOS, co-funded by the European Social Fund and national resources.

## Professional Memberships

**Senior member:** IEEE and IEEE Signal Processing Society.

**Member:** Acoustical Society of America; International Speech Communication Association; International Phonetic Association; Technical Chamber of Greece.

## Academic Activities

2016 Session Chair, Interspeech.

2014 Co-organizer, USC Speech MRI Summit, Los Angeles, CA.

2013 Co-organizer and Chair of the Special Session *Articulatory Data Acquisition and Processing*, Interspeech.

Ongoing **Ad-hoc reviewer for:** NSF; DFG, German Research Council; The Journal of the Acoustical Society of America; Language; Journal of Phonetics; Laboratory Phonology; Journal of Speech, Language, and Hearing Research; IEEE Transactions on Audio, Speech, and Language Processing; IEEE Journal of Selected Topics in Signal Processing; IEEE Computer Graphics and Applications; Computer, Speech & Language; Behavior Research Methods; Computer Methods and Programs in Biomedicine; Applied Acoustics; Interspeech; IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP); European Signal Processing Conference (EUSIPCO); International Congress of Phonetic Sciences (ICPhS); International Seminar on Speech Production (ISSP).

## Selected Talks

2021 *From gestural specifications to realistic, speaker-specific vocal-tract shaping*, Neural Bases of Speech Production Symposium, UCSF.

2016 *Vocal tract dynamics and speech acoustics*, 11th Annual Hearing Symposium, Center for Speech and Hearing, UC Irvine.

2011 *Revolving around Dynamic Speech Data*, Séminaires de Recherches en Phonétique et Phonologie, Laboratoire de Phonétique et Phonologie, Paris, France.

2005 *Statistical Acoustic-to-Electropalatographic Mapping*, International EPG Symposium, Edinburgh, UK.

2003 *Acoustic-to-Articulatory Inversion of Speech and Detection of Phonetic Features in the Speech Signal*, Student Talk, Machine Learning Summer School (MLSS), Tübingen, Germany.

## PhD and Qualifying Committees

In Progress Miran Oh, USC Linguistics

2020 Tanner Sorensen, USC Linguistics, *Dynamics of Speech Tasks and Articulator Synergies*

## Grants and Funding

2019 - now *Speaker-specific articulatory strategies*. NSF RI Small. Role: PI

2015 - 2019 *Understanding individual-level speech variability: From novel articulatory data to robust speaker recognition*. NSF RI Medium. Role: Senior researcher. PI: Shrikanth Narayanan.

2012 - 2020 *Dynamics of vocal tract shaping*. NIH R01. Role: Research coordinator. PI: Shrikanth Narayanan.

2011 - 2012 *ARTIS: Articulatory inversion from audiovisual speech for augmented speech presentation*. French ANR. Role: Research associate. PI: Yves Laprie.

2009 - 2011 *ViSAC: Acoustic-visual speech synthesis by bimodal unit concatenation*. French ANR. Role: Research associate. PI: Slim Ouni.

2007 - 2009 *ASPI: Audiovisual speech inversion*. European FP6/IST. Role: Research associate. PI: Yves Laprie.

## Journal Articles

[1] Yongwan Lim, **Asterios Toutios**, Yannick Bliesener, Ye Tian, Sajan Goud Lingala, Colin Vaz, Tanner Sorensen, Miran Oh, Sarah Harper, Weiyi Chen, Yoonjeong Lee, Johannes Töger, Mairym Lloréns Montesserin, Caitlin Smith, Bianca Godinez, Louis Goldstein, Dani Byrd, Krishna S. Nayak, and Shrikanth S. Narayanan. "A multispeaker dataset of raw and reconstructed speech production real-time MRI video and 3D volumetric images". In: *Scientific Data* 8.187 (2021).

[2] Jangwon Kim, **Asterios Toutios**, Sungbok Lee, and Shrikanth S. Narayanan. "Vocal tract shaping of emotional speech". In: *Computer Speech & Language* 64 (2020), p. 101100.

[3] **Asterios Toutios**, Melissa Xu, Dani Byrd, Louis Goldstein, and Shrikanth Narayanan. "How an aglossic speaker produces an alveolar-like percept without a functional tongue tip". In: *The Journal of the Acoustical Society of America* 147.6 (2020), EL460–EL464.

[4] Rachel Alexander, Tanner Sorensen, **Asterios Toutios**, and Shrikanth Narayanan. "A modular architecture for articulatory synthesis from gestural specification". In: *The Journal of the Acoustical Society of America* 146.6 (2019), pp. 4458–4471.

[5] Christina Hagedorn, Tanner Sorensen, Adam Lammert, **Asterios Toutios**, Louis Goldstein, Dani Byrd, and Shrikanth Narayanan. "Engingeering innovation in speech science: data and technologies". In: *Perspectives of the ASHA Special Interest Groups* (2019), pp. 1–10.

[6] Tanner Sorensen, **Asterios Toutios**, Louis Goldstein, and Shrikanth Narayanan. "Task-dependence of articulator synergies". In: *The Journal of the Acoustical Society of America* 145.3 (2019), pp. 1504–1520.

[7] Sajan Goud Lingala, Yinghua Zhu, Yoon-Chul Kim, **Asterios Toutios**, Shrikanth Narayanan, and Krishna S. Nayak. "A fast and flexible MRI system for the study of dynamic vocal tract shaping". In: *Magnetic Resonance in Medicine* 77.1 (2017), pp. 112–125.

[8] Sajan Goud Lingala, Yinghua Zhu, Yongwan Lim, **Asterios Toutios**, Yunhua Ji, Wei-Ching Lo, Nicole Seiberlich, Shrikanth Narayanan, and Krishna S. Nayak. "Feasibility of through-time spiral generalized autocalibrating partial parallel acquisition for low latency accelerated real-time MRI of speech". In: *Magnetic Resonance in Medicine* 78.6 (2017), pp. 2275–2282.

[9] Betty McMicken, Frederico Salles, Shelley Von Berg, Margaret Vento-Wilson, Kelly Rogers, **Asterios Toutios**, and Shrikanth S. Narayanan. "Bilabial substitution patterns during consonant production in a case of congenital aglossia". In: *Journal of Communication Disorders, Deaf Studies & Hearing Aids* 5.2 (2017), pp. 1–6.

[10] Johannes Töger, Tanner Sorensen, Krishna Somandepalli, **Asterios Toutios**, Sajan Goud Lingala, Shrikanth Narayanan, and Krishna Nayak. "Test-retest repeatability of human speech biomarkers from static and real-time dynamic magnetic resonance imaging". In: *The Journal of the Acoustical Society of America* 141.5 (2017), pp. 3323–3336.

[11] **Asterios Toutios** and Shrikanth Narayanan. "Advances in real-time magnetic resonance imaging of the vocal tract for speech science and technology research". In: *APSIPA Transactions on Signal and Information Processing* 5 (2016), e6.

[12] Jangwon Kim, **Asterios Toutios**, Sungbok Lee, and Shrikanth S. Narayanan. "A kinematic study of critical and non-critical articulators in emotional speech production". In: *The Journal of the Acoustical Society of America* 137.3 (2015), pp. 1411–1429.

[13] Sajan Goud Lingala, Yinghua Zhu, Yoon-Chul Kim, **Asterios Toutios**, Shrikanth S. Narayanan, and Krishna S. Nayak. "Towards high frame rate real-time magnetic resonance imaging of speech production". In: *SPIE Newsroom* (2015).

[14] Shrikanth Narayanan, **Asterios Toutios**, Vikram Ramanarayanan, Adam Lammert, Jangwon Kim, Sungbok Lee, Krishna Nayak, Yoon-Chul Kim, Yinghua Zhu, Louis Goldstein, Dani Byrd, Erik Bresch, Prasanta Ghosh, Athanasios Katsamanis, and Michael Proctor. "Real-time magnetic resonance imaging and electromagnetic articulography database for speech production research (TC)". In: *The Journal of the Acoustical Society of America* 136.3 (2014), pp. 1307–1311.

[15] Slim Ouni, Vincent Colotte, Utpala Musti, **Asterios Toutios**, Brigitte Wrobel-Dautcourt, Marie-Odile Berger, and Caroline Lavecchia. "Acoustic-visual synthesis technique using bimodal unit-selection". In: *EURASIP Journal on Audio, Speech, and Music Processing* 2013.1 (2013), pp. 1–13.

[16] **Asterios Toutios**, Slim Ouni, and Yves Laprie. "Estimating the parameters of an articulatory model from electromagnetic articulograph data". In: *Journal of the Acoustical Society of America* 129.5 (2011), pp. 3245–3257.

[17] **Asterios Toutios** and Konstantinos Margaritis. "Estimating electropalatographic patterns from the speech signal". In: *Computer Speech & Language* 22.4 (2008), pp. 346–359.

## Book Chapters

[1] Michael Proctor, Yinghua Zhu, Adam Lammert, **Asterios Toutios**, Bonny Sands, and Shrikanth Narayanan. "Studying clicks using real-time MRI". In: *Click Consonants*. Ed. by Bonny Sands. Leiden, The Netherlands: Brill, 2020, pp. 210–240.

[2] **Asterios Toutios**, Dani Byrd, Louis Goldstein, and Shrikanth Narayanan. "Advances in vocal tract imaging and analysis." In: *The Routledge Handbook of Phonetics*. Ed. by William Katz and Peter Assmann. London and New York: Routledge, 2019.

[3] Michael Proctor, Yinghua Zhu, Adam Lammert, **Asterios Toutios**, Bonny Sands, Ulrich Hummel, and Shrikanth Narayanan. "Click consonant production in Khoekhoe: a real-time MRI study". In: *Khoisan Languages and Linguistics. Proc. 5th Intl. Symposium, July 13-17, 2014, Riezlern/Kleinwalsertal*. Ed. by Sheena Shah and Matthias Brenzinger. Research in Khoisan Studies. Cologne: Rüiger Köppe, 2016, pp. 337–366.

[4] **Asterios Toutios** and Konstantinos Margaritis. "Mapping the speech signal onto electromagnetic articulography trajectories using support vector regression". In: *Text Speech and Dialogue, LNCS 3658*. Ed. by V. Matusec et al. Springer-Verlag, 2005, pp. 318–325.

[5] **Asterios Toutios** and Konstantinos Margaritis. "On the Acoustic-to-Electropalatographic Mapping". In: *Nonlinear Analyses and Algorithms for Speech Processing, LNCS 3817*. Ed. by M. Faundez-Zanuy et al. Springer-Verlag, 2005, pp. 186–195.

## Papers in Conference Proceedings

[1] Ashwin Hebbar, Rahul Sharma, Krishna Somandepalli, **Asterios Toutios**, and Shrikanth S. Narayanan. "Vocal tract articulatory contour detection in real-time magnetic resonance images using spatio-temporal context". In: *IEEE International Conference on Audio, Speech and Signal Processing* (*ICASSP*). Barcelona, Spain, 2020.

[2] Rachel Alexander, Tanner Sorensen, **Asterios Toutios**, and Shrikanth S. Narayanan. "VCV synthesis using Task Dynamics to animate a factor-based articulatory model". In: *Interspeech*. Stockholm, Sweden, 2017.

[3] Jieshen Chen, Sajan Goud Lingala, Yongwan Lim, **Asterios Toutios**, Shrikanth Narayanan, and Krishna Nayak. "Task-based optimization of regularization in highly accelerated speech RT-MRI". In: *International Society for Magnetic Resonance in Medicine* (*ISMRM*) *25th Scientific Sessions*. Honolulu, HI, 2017.

[4] Zisis Skordilis, **Asterios Toutios**, Johannes Töger, and Shrikanth S. Narayanan. "Estimation of vocal tract area function from volumetric magnetic resonance imaging". In: *IEEE International Conference on Audio, Speech and Signal Processing* (*ICASSP*). New Orleans, LA, 2017.

[5] Krishna Somandepalli, **Asterios Toutios**, and Shrikanth S. Narayanan. "Semantic edge detection for tracking vocal tract air-tissue boundaries in real-time magnetic resonance images". In: *Interspeech*. Stockholm, Sweden, 2017.

[6] Tanner Sorensen, Zisis Skordilis, **Asterios Toutios**, Yoon-Chul Kim, Yinghua Zhu, Jangwon Kim, Adam Lammert, Vikram Ramanarayanan, Louis Goldstein, Dani Byrd, Krishna Nayak, and Shrikanth S. Narayanan. "Database of volumetric and real-time vocal tract MRI for speech science". In: *Interspeech*. Stockholm, Sweden, 2017.

[7] Tanner Sorensen, **Asterios Toutios**, Johannes Töger, Louis Goldstein, and Shrikanth S. Narayanan. "Test-retest repeatability of articulatory strategies using real-time magnetic resonance imaging". In: *Interspeech*. Stockholm, Sweden, 2017.

[8] Johannes Töger, Tanner Sorensen, Krishna Somandepalli, **Asterios Toutios**, Sajan Goud Lingala, Shrikanth Narayanan, and Krishna Nayak. "Test-retest repeatability of human speech biomarkers from static and real-time dynamic magnetic resonance imaging". In: *International Society for Magnetic Resonance in Medicine* (*ISMRM*) *25th Scientific Sessions*. Honolulu, HI, 2017.

[9] Yongwan Lim, Sajan Goud Lingala, **Asterios Toutios**, Shrikanth Narayanan, and Krishna Nayak. "Improved depiction of tissue boundaries in vocal tract real-time MRI using automatic off-resonance correction". In: *Interspeech*. San Francisco, CA, 2016.

[10] Sajan Goud Lingala, **Asterios Toutios**, Johannes Toger, Yongwan Lim, Yinghua Zhu, Yoon-Chul Kim, Colin Vaz, Shrikanth Narayanan, and Krishna Nayak. "State-of-the-art MRI protocol for comprehensive assessment of vocal tract structure and function". In: *Interspeech*. San Francisco, CA, 2016.

[11] Sajan Goud Lingala, Yinghua Zhu, Yunhua Ji, **Asterios Toutios**, Wei-Ching Lo, Nicole Seiberlich, Shrikanth S. Narayanan, and Krishna S. Nayak. "Accelerating real-time MRI of speech using spiral through-time GRAPPA". In: *International Society for Magnetic Resonance in Medicine* (*ISMRM*) *24th Scientific Sessions*. Singapore, 2016.

[12] Tanner Sorensen, **Asterios Toutios**, Louis Goldstein, and Shrikanth Narayanan. "Characterizing vocal tract dynamics across speakers using real-time MRI". In: *Interspeech*. San Francisco, CA, 2016.

[13] **Asterios Toutios**, Sajan Goud Lingala, Colin Vaz, Jangwon Kim, John Esling, Patricia Keating, Matthew Gordon, Dani Byrd, Louis Goldstein, Krishna Nayak, and Shrikanth Narayanan. "Illustrating the production of the International Phonetic Alphabet sounds using fast real-time magnetic resonance imaging". In: *Interspeech*. San Francisco, CA, 2016.

[14] **Asterios Toutios**, Tanner Sorensen, Krishna Somandepalli, Rachel Alexander, and Shrikanth Narayanan. "Articulatory synthesis based on real-time magnetic resonance imaging data". In: *Interspeech*. San Francisco, CA, 2016.

[15] Colin Vaz, **Asterios Toutios**, and Shrikanth Narayanan. "Convex hull convolutive non-negative matrix factorization for uncovering temporal patterns in multivariate time-series data". In: *Interspeech*. San Francisco, CA, 2016.

[16] **Asterios Toutios** and Shrikanth S. Narayanan. "Factor analysis of vocal-tract outlines derived from real-time magnetic resonance imaging data". In: *International Congress of Phonetic Sciences* (*ICPhS 2015*). Glasgow, UK, 2015.

[17] Jangwon Kim, **Asterios Toutios**, Yoon-Chul Kim, Yinghua Zhu, Sungbok Lee, and Shrikanth S. Narayanan. "USC-EMO-MRI corpus: An emotional speech production database recorded by real-time magnetic resonance imaging". In: *International Seminar on Speech Production* (*ISSP*). Cologne, Germany, 2014.

[18] Sajan Goud Lingala, Yinghua Zhu, Yoon-Chul Kim, **Asterios Toutios**, Shrikanth S. Narayanan, and Krishna S. Nayak. "High spatio-temporal resolution multi-slice real time MRI of speech using golden angle spiral imaging with constrained reconstruction, parallel imaging, and a novel upper airway coil". In: *International Society for Magnetic Resonance in Medicine* (*ISMRM*) *20th Scientific Sessions*. Toronto, Canada, 2014, p. 1539.

[19] Yoon-Chul Kim, Jangwon Kim, Michael I. Proctor, **Asterios Toutios**, Krishna S. Nayak, Sungbok Lee, and Shrikanth S. Narayanan. "Toward automatic vocal tract area function estimation from accelerated three-dimensional magnetic resonance imaging". In: *ISCA Workshop on Speech Production in Automatic Speech Recognition* (*SPASR*). Lyon, France, 2013.

[20] Michael I. Proctor, Louis Goldstein, Adam Lammert, Dani Byrd, **Asterios Toutios**, and Shrikanth S. Narayanan. "Velic Coordination in French Nasals: a Realtime Magnetic Resonance Imaging Study". In: *Interspeech*. Lyon, France, 2013.

[21] **Asterios Toutios** and Shrikanth S. Narayanan. "Articulatory synthesis of French connected speech from EMA data". In: *Interspeech*. Lyon, France, 2013.

[22] Yinghua Zhu, **Asterios Toutios**, Shrikanth S. Narayanan, and Krishna S. Nayak. "Faster 3D vocal tract real-time MRI using constrained reconstruction". In: *Interspeech*. Lyon, France, 2013.

[23] **Asterios Toutios** and Shinji Maeda. "Articulatory VCV synthesis from EMA data". In: *Interspeech*. Portland, OR, 2012.

[24] Utpala Musti, Vincent Colotte, **Asterios Toutios**, and Slim Ouni. "Introducing visual target cost within an acoustic-visual unit-selection speech synthesizer". In: *International Conference on Auditory-Visual Speech Processing* (*AVSP*). Volterra, Italy, 2011.

[25] **Asterios Toutios**, Utpala Musti, Slim Ouni, and Vincent Colotte. "Weight optimization for bimodal unit-selection talking head synthesis". In: *Interspeech*. Florence, Italy, 2011.

[26] **Asterios Toutios** and Slim Ouni. "Predicting tongue positions from acoustics and facial features". In: *Interspeech*. Florence, Italy, 2011.

[27] Utpala Musti, **Asterios Toutios**, Slim Ouni, Vincent Colotte, Brigitte Wrobel-Dautcourt, and Marie-Odile Berger. "HMM-based automatic visual speech segmentation using facial data". In: *Interspeech*. Makuhari, Japan, 2010, pp. 1401–1404.

[28] **Asterios Toutios**, Utpala Musti, Slim Ouni, Vincent Colotte, Brigitte Wrobel-Dautcourt, and Marie-Odile Berger. "Setup for acoustic-visual speech synthesis by concatenating bimodal units". In: *Interspeech*. Makuhari, Japan, 2010, pp. 486–489.

[29] **Asterios Toutios**, Utpala Musti, Slim Ouni, Vincent Colotte, Brigitte Wrobel-Dautcourt, and Marie-Odile Berger. "Towards a true acoustic-visual speech synthesis". In: *International Conference on Auditory-Visual Speech Processing* (*AVSP*). Hakone, Kanagawa, Japan, 2010, POS1–8.

[30] Michael Aron, **Asterios Toutios**, Marie-Odile Berger, Erwan Kerrien, Brigitte Wrobel-Dautcourt, and Yves Laprie. "Registration of multimodal data for estimating the parameters of an articulatory model". In: *IEEE International Conference on Acoustics, Speech and Signal Processing* (*ICASSP*). Taipei, Taiwan, 2009, pp. 4489–4492.

[31] **Asterios Toutios** and Konstantinos Margaritis. "Contribution to statistical acoustic-to-EMA mapping". In: *European Signal Processing Conference* (*EUSIPCO*). Lausanne, Switzerland, 2008.

[32] **Asterios Toutios**, Slim Ouni, and Yves Laprie. "Protocol for a model-based evaluation of a dynamic acoustic-to-articulatory inversion method using electromagnetic articulography". In: *International Seminar on Speech Production* (*ISSP*). Strasbourg, France, 2008, pp. 317–320.

[33] **Asterios Toutios** and Konstantinos Margaritis. "Enhancing acoustic-to-EPG mapping with lip position information". In: *Interspeech*. Antwerp, Belgium, 2007, pp. 1374–1377.

[34] **Asterios Toutios** and Konstantinos Margaritis. "Learning electropalatograms from acoustics". In: *IEEE International Conference on Acoustics, Speech and Signal Processing* (*ICASSP*). Toulouse, France, 2006, pp. 361–364.

[35] **Asterios Toutios** and Konstantinos Margaritis. "A support vector approach to the acoustic-to-articulatory mapping". In: *Interspeech*. Lisbon, Portugal, 2005, pp. 3221–3224.

[36] **Asterios Toutios** and Konstantinos Margaritis. "Learning articulation from cepstral coefficients". In: *International Conference on Speech and Computer* (*SPECOM*). Patras, Greece, 2005.

[37] **Asterios Toutios** and Konstantinos Margaritis. "Mapping between the speech signal and articulatory trajectories". In: *Hellenic European Conference on Computer Mathematics and its Applications* (*HERCMA*). Athens, Greece, 2005.

[38] **Asterios Toutios** and Konstantinos Margaritis. "On the acoustic-to-electropalatographic mapping". In: *International Conference on Non-Linear Speech Processing* (*NOLISP*). Barcelona, Spain, 2005, pp. 186–195.

[39] **Asterios Toutios** and Konstantinos Margaritis. "Estimating tongue-palate contact patterns from the speech signal". In: *International Conference on Speech and Computer* (*SPECOM*). St. Petersburg, Russia, 2004, pp. 158–165.

[40] **Asterios Toutios** and Konstantinos Margaritis. "A rough guide to the acoustic-to-articulatory inversion of speech". In: *Hellenic European Conference on Computer Mathematics and its Applications* (*HERCMA*). Athens, Greece, 2003.

[41] **Asterios Toutios** and Konstantinos Margaritis. "Acoustic-to-articulatory inversion of speech: a review". In: *International Turkish Symposium on Artificial Intelligence and Neural Networks* (*TAINN*). Canakkale, Turkey, 2003.

[42] **Asterios Toutios** and Konstantinos Margaritis. "Development of a text-dependent speaker identification system with the OGI toolkit". In: *Hellenic Conference on Artificial Intelligence* (*SETN*). Thessaloniki, Greece, 2002.

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## Posters and Abstracts

[1] **Asterios Toutios** and Shrikanth Narayanan. "Simulating anticipatory coarticulation in VCV utterances with a gestural articulatory synthesizer". In: *International Seminar on Speech Production* (*ISSP*). Providence, RI, 2020.

[2] Melissa Xu, **Asterios Toutios**, Tanner Sorensen, and Shrikanth Narayanan. "Using real-time MRI to assess the decrease of jaw contribution in constriction formation synergies during early adolescence". In: *International Seminar on Speech Production* (*ISSP*). Providence, RI, 2020.

[3] Bianca P. Godinez, **Asterios Toutios**, and Shrikanth S. Narayanan. "A real-time magnetic resonance imaging study of cross-speaker variability in the production of /ɹ/". In: *The Journal of the Acoustical Society of America* 146.4 (2019), pp. 3083–3083.

[4] **Asterios Toutios**, Reed Blaylock, Louis Goldstein, and Shrikanth S. Narayanan. "Toward cross-speaker articulatory modeling". In: *The Journal of the Acoustical Society of America* 146.4 (2019), pp. 3085–3085.

[5] Tanner Sorensen, Alison Yu, **Asterios Toutios**, Brenda Villegas, Melody Ouyoung, Shrikanth Narayanan, and Uttam Sinha. "Feasibility of real-time magnetic resonance imaging of true vocal fold paralysis". In: *Poster presentation at the American Academy of Otolaryngology—Head and Neck Surgery Foundation Annual Meeting and OTO Experience*. Atlanta, GA, 2018.

[6] Rachel Alexander, Tanner Sorensen, **Asterios Toutios**, and Shrikanth S. Narayanan. "VCV synthesis using Task Dynamics to animate a factor-based articulatory model". In: *Workshop for Young Female Researchers in Speech Science & Technology*. Stockholm, Sweden, 2017.

[7] Mairym Llorens, Dani Byrd, Nancy Vazquez, Louis Goldstein, Tanner Sorensen, **Asterios Toutios**, and Shrikanth S. Narayanan. "Indexing tongue profile narrowing for English lateral consonants using 3D volumetric MR imaging". In: *The Journal of the Acoustical Society of America*. Vol. 142. 4. 2017, pp. 2581–2581.

[8] Miran Oh, **Asterios Toutios**, Dani Byrd, Louis Goldstein, and Shrikanth S. Narayanan. "Tracking larynx movement in real-time MRI data". In: *The Journal of the Acoustical Society of America* 142.4 (2017), pp. 2579–2579.

[9] Tanner Sorensen, **Asterios Toutios**, Louis Goldstein, and Shrikanth Narayanan. "Decomposing vocal tract constrictions into articulator contributions using real-time magnetic resonance imaging". In: *Speech Motor Control*. Groningen, The Netherlands, 2017, p. 19.

[10] Tanner Sorensen, **Asterios Toutios**, Louis Goldstein, and Shrikanth S. Narayanan. "Tracking developmental changes in articulatory strategy during childhood". In: *The Journal of the Acoustical Society of America* 142.4 (2017), pp. 2584–2584.

[11] **Asterios Toutios**, Dani Byrd, Louis Goldstein, and Shrikanth S. Narayanan. "Articulatory compensation strategies employed by an aglossic speaker". In: *The Journal of the Acoustical Society of America* 142.4 (2017), pp. 2639–2639.

[12] Rachel Alexander, **Asterios Toutios**, and Shrikanth Narayanan. "Articulatory speech synthesis from vocal-tract MRI data". In: *Workshop for Young Female Researchers in Speech Science & Technology*. San Francisco, CA, 2016.

[13] Tanner Sorensen, **Asterios Toutios**, Louis Goldstein, and Shrikanth S. Narayanan. "Characterizing vocal tract dynamics with real-time MRI". In: *15th Conference on Laboratory Phonology*. Ithaca, NY, 2016.

[14] Gary Yeung, Steven M. Lulich, **Asterios Toutios**, Abeer Alwan, and Amber Afshan. "Analysis of children's high front vowel area function using three-dimensional ultrasound imaging". In: *The Journal of the Acoustical Society of America* 140.4 (2016), pp. 3448–3448.