# Assad A Oberai

List of Publications by Year
in descending order

| 127 papers | 3,858 citations | 147566<br>31 h-index | 138251<br>58 g-index |
|---|---|---|---|
| 130 all docs | 130 docs citations | 130 times ranked | 2350 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | A parallel interface tracking approach for evolving geometry problems. Engineering With Computers, 2022, 38, 4289-4305. | 3.5 | 3 |
| 2 | A Radiomic-based Machine Learning Algorithm to Reliably Differentiate Benign Renal Masses from Renal Cell Carcinoma. European Urology Focus, 2022, 8, 988-994. | 1.6 | 15 |
| 3 | Spectral analysis of weighted Laplacians arising in data clustering. Applied and Computational Harmonic Analysis, 2022, 56, 189-249. | 1.1 | 3 |
| 4 | Geometry and Adaptive Mesh Update Procedures for Ballistics Simulations. SEMA SIMAI Springer Series, 2022, , 209-231. | 0.4 | 1 |
| 5 | High-Frequency Ultrasound Elastography to Assess the Nonlinear Elastic Properties of the Cornea and Ciliary Body. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 2621-2629. | 1.7 | 15 |
| 6 | Accounting for super-spreader events and algebraic decay in SIR models. Computer Methods in Applied Mechanics and Engineering, 2022, , 115286. | 3.4 | 6 |
| 7 | On the applicability of continuum scale models for ultrafast nanoscale liquid-vapor phase change. International Journal of Multiphase Flow, 2021, 135, 103508. | 1.6 | 2 |
| 8 | Shape and texture-based radiomics signature on CT effectively discriminates benign from malignant renal masses. European Radiology, 2021, 31, 1011-1021. | 2.3 | 40 |
| 9 | GAN-Based Priors for Quantifying Uncertainty in Supervised Learning. SIAM-ASA Journal on Uncertainty Quantification, 2021, 9, 1314-1343. | 1.1 | 9 |
| 10 | Repeatability of Linear and Nonlinear Elastic Modulus Maps From Repeat Scans in the Breast. IEEE Transactions on Medical Imaging, 2021, 40, 748-757. | 5.4 | 6 |
| 11 | Machine learning based predictors for COVID-19 disease severity. Scientific Reports, 2021, 11, 4673. | 1.6 | 48 |
| 12 | A comprehensive spatial-temporal infection model. Chemical Engineering Science, 2021, 233, 116347. | 1.9 | 10 |
| 13 | Benchmarking Various Radiomic Toolkit Features While Applying the Image Biomarker Standardization Initiative toward Clinical Translation of Radiomic Analysis. Journal of Digital Imaging, 2021, 34, 1156-1170. | 1.6 | 11 |
| 14 | Predicting clinical outcomes in COVID-19 using radiomics on chest radiographs. British Journal of Radiology, 2021, 94, 20210221. | 1.0 | 15 |
| 15 | Tissue Mechanics. , 2021, , 2-1-2-20. | | 1 |
| 16 | An automated approach for parallel adjoint-based error estimation and mesh adaptation. Engineering With Computers, 2020, 36, 1169-1188. | 3.5 | 0 |
| 17 | Introduction to quasi-static elastography. , 2020, , 61-83. | | 0 |
| 18 | Material parameter optimization for interior and exterior fluidâ€structure acoustic problems. International Journal for Numerical Methods in Engineering, 2020, 121, 5568-5589. | 1.5 | 0 |

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|---|---------|----|-----------|
| 19 | Deep learning based classification of solid lipid-poor contrast enhancing renal masses using contrast enhanced CT. British Journal of Radiology, 2020, 93, 20200002. | 1.0 | 23 |
| 20 | Three-dimensional traction microscopy accounting for cell-induced matrix degradation. Computer Methods in Applied Mechanics and Engineering, 2020, 364, 112935. | 3.4 | 11 |
| 21 | Residual-based stabilized formulation for the solution of inverse elliptic partial differential equations. Computers and Mathematics With Applications, 2020, 80, 822-836. | 1.4 | 0 |
| 22 | Deformation of a Panel in Repeated High Speed Flow Modeled with Creep and Multiplicatively-Decomposed Plasticity. , 2020, , . | | 2 |
| 23 | Characterization of Spatially Graded Biomechanical Scaffolds. Journal of Biomechanical Engineering, 2020, 142, . | 0.6 | 4 |
| 24 | Recovery of Tractions Exerted by Single Cells in Three-Dimensional Nonlinear Matrices. Journal of Biomechanical Engineering, 2020, 142, . | 0.6 | 14 |
| 25 | Deep learning-based detection, classification, and localization of defects in semiconductor processes. Journal of Micro/ Nanolithography, MEMS, and MOEMS, 2020, 19, 1. | 1.0 | 9 |
| 26 | The Coupled Adjoint-State Equation in forward and inverse linear elasticity: Incompressible plane stress. Computer Methods in Applied Mechanics and Engineering, 2019, 357, 112588. | 3.4 | 12 |
| 27 | Myosin IIAâ€"mediated forces regulate multicellular integrity during vascular sprouting. Molecular Biology of the Cell, 2019, 30, 1974-1984. | 0.9 | 24 |
| 28 | A continuum framework for modeling liquid-vapor interfaces out of local thermal equilibrium. International Journal of Heat and Mass Transfer, 2019, 144, 118597. | 2.5 | 6 |
| 29 | Computational Study on Rotor Interactional Effects for a Quadcopter in Edgewise Flight. AIAA Journal, 2019, 57, 5309-5319. | 1.5 | 47 |
| 30 | Three-dimensional traction microscopy with a fiber-based constitutive model. Computer Methods in Applied Mechanics and Engineering, 2019, 357, 112579. | 3.4 | 20 |
| 31 | Circumventing the solution of inverse problems in mechanics through deep learning: Application to elasticity imaging. Computer Methods in Applied Mechanics and Engineering, 2019, 353, 448-466. | 3.4 | 24 |
| 32 | A locally discontinuous ALE finite element formulation for compressible phase change problems. Journal of Computational Physics, 2019, 393, 438-464. | 1.9 | 7 |
| 33 | Computational Study of Diffuser Length on Ducted Rotor Performance in Edgewise Flight. AIAA Journal, 2019, 57, 796-808. | 1.5 | 12 |
| 34 | Volumetric quantitative optical coherence elastography with an iterative inversion method. Biomedical Optics Express, 2019, 10, 384. | 1.5 | 14 |
| 35 | Adjoint-based error estimation and mesh adaptation for stabilized finite deformation elasticity. Computer Methods in Applied Mechanics and Engineering, 2018, 337, 263-280. | 3.4 | 8 |
| 36 | Computational Analysis of Isolated and Embedded Ducted Rotors in Edgewise Flight. , 2018, , . | | 1 |

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|---|---------|----|-----------|
| 37 | Stochasticity in materials structure, properties, and processing—A review. Applied Physics Reviews, 2018, 5, . | 5.5 | 15 |
| 38 | Simulation of finite-strain inelastic phenomena governed by creep and plasticity. Computational Mechanics, 2018, 62, 323-345. | 2.2 | 6 |
| 39 | Direct error in constitutive equation formulation for inverse heat conduction problem. International Journal for Numerical Methods in Engineering, 2018, 115, 1337-1352. | 1.5 | 2 |
| 40 | Recovering vector displacement estimates in quasistatic elastography using sparse relaxation of the momentum equation. Inverse Problems in Science and Engineering, 2017, 25, 326-362. | 1.2 | 17 |
| 41 | Recovery of cellular traction in three-dimensional nonlinear hyperelastic matrices. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 296-313. | 3.4 | 23 |
| 42 | Towards the mechanical characterization of abdominal wall by inverse analysis. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 66, 127-137. | 1.5 | 14 |
| 43 | First-order and second-order adjoint methods for parameter identification problems with an application to the elasticity imaging inverse problem. Inverse Problems in Science and Engineering, 2017, 25, 1768-1787. | 1.2 | 10 |
| 44 | Output-based error estimation and mesh adaptation for variational multiscale methods. Computer Methods in Applied Mechanics and Engineering, 2017, 322, 441-459. | 3.4 | 14 |
| 45 | Component-based workflows for parallel thermomechanical analysis of arrayed geometries. Engineering With Computers, 2017, 33, 509-517. | 3.5 | 2 |
| 46 | Inertial Microfluidic Cell Stretcher (iMCS): Fully Automated, High-Throughput, and Near Real-Time Cell Mechanotyping. Small, 2017, 13, 1700705. | 5.2 | 56 |
| 47 | Improving three-dimensional mechanical imaging of breast lesions with principal component analysis. Medical Physics, 2017, 44, 4194-4203. | 1.6 | 6 |
| 48 | Microfluidics: Inertial Microfluidic Cell Stretcher (iMCS): Fully Automated, High-Throughput, and Near Real-Time Cell Mechanotyping (Small 28/2017). Small, 2017, 13, . | 5.2 | 4 |
| 49 | Stochastic variational multiscale analysis of the advection–diffusion equation: Advective–diffusive regime and multi-dimensional problems. Computer Methods in Applied Mechanics and Engineering, 2017, 325, 766-799. | 3.4 | 2 |
| 50 | Direct error in constitutive equation formulation for plane stress inverse elasticity problem. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 3-18. | 3.4 | 13 |
| 51 | Inferring spatial variations of microstructural properties from macroscopic mechanical response. Biomechanics and Modeling in Mechanobiology, 2017, 16, 479-496. | 1.4 | 9 |
| 52 | Approximate optimal projection for reduced-order models. International Journal for Numerical Methods in Engineering, 2016, 105, 63-80. | 1.5 | 9 |
| 53 | Uniqueness of the interior plane strain time-harmonic viscoelastic inverse problem. Journal of the Mechanics and Physics of Solids, 2016, 92, 345-355. | 2.3 | 0 |
| 54 | Quantitative Compression Optical Coherence Elastography as an Inverse Elasticity Problem. IEEE Journal of Selected Topics in Quantum Electronics, 2016, 22, 277-287. | 1.9 | 39 |

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| 55 | A palette of fine-scale eddy viscosity and residual-based models for variational multiscale formulations of turbulence. Computational Mechanics, 2016, 57, 629-635. | 2.2 | 3 |
| 56 | Noninvasive In-Vivo Quantification of Mechanical Heterogeneity of Invasive Breast Carcinomas. PLoS ONE, 2015, 10, e0130258. | 1.1 | 28 |
| 57 | Bring the NLACE model online using XSEDE and HUBzero. , 2015, , . | | 0 |
| 58 | A new class of finite element variational multiscale turbulence models for incompressible magnetohydrodynamics. Journal of Computational Physics, 2015, 295, 596-616. | 1.9 | 18 |
| 59 | Algorithms for quantitative quasiâ€static elasticity imaging using force data. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 1421-1436. | 1.0 | 14 |
| 60 | Biomechanical imaging of cell stiffness and prestress with subcellular resolution. Biomechanics and Modeling in Mechanobiology, 2014, 13, 665-678. | 1.4 | 33 |
| 61 | A residual based eddy viscosity model for the large eddy simulation of turbulent flows. Computer Methods in Applied Mechanics and Engineering, 2014, 282, 54-70. | 3.4 | 15 |
| 62 | Uniqueness of inverse problems of isotropic incompressible three-dimensional elasticity. Journal of the Mechanics and Physics of Solids, 2014, 73, 55-68. | 2.3 | 13 |
| 63 | Adjoint consistency analysis of residual-based variational multiscale methods. Journal of Computational Physics, 2013, 255, 396-406. | 1.9 | 7 |
| 64 | A Galerkin least squares method for time harmonic Maxwell equations using NÃ©dÃ©lec elements. Journal of Computational Physics, 2013, 235, 67-81. | 1.9 | 5 |
| 65 | Uniqueness of the elastography inverse problem for incompressible nonlinear planar hyperelasticity. Inverse Problems, 2012, 28, 065008. | 1.0 | 16 |
| 66 | Large eddy simulation models for incompressible magnetohydrodynamics derived from the variational multiscale formulation. Physics of Plasmas, 2012, 19, . | 0.7 | 4 |
| 67 | A Two-Way Coupled Polydispersed Two-Fluid Model for the Simulation of Air Entrainment Beneath a Plunging Liquid Jet. Journal of Fluids Engineering, Transactions of the ASME, 2012, 134, . | 0.8 | 13 |
| 68 | Linear and Nonlinear Elastic Modulus Imaging: An Application to Breast Cancer Diagnosis. IEEE Transactions on Medical Imaging, 2012, 31, 1628-1637. | 5.4 | 103 |
| 69 | Formulas for detecting a spherical stiff inclusion from interior data: a sensitivity analysis for the Helmholtz equation. Inverse Problems, 2012, 28, 084004. | 1.0 | 5 |
| 70 | Solution of the timeâ€harmonic viscoelastic inverse problem with interior data in two dimensions. International Journal for Numerical Methods in Engineering, 2012, 92, 1100-1116. | 1.5 | 17 |
| 71 | A Comprehensive Sub-Grid Air Entrainment Model for RaNS Modeling of Free-Surface Bubbly Flows. Journal of Computational Multiphase Flows, 2011, 3, 41-56. | 0.8 | 42 |
| 72 | Recent Results in Nonlinear Strain and Modulus Imaging. Current Medical Imaging, 2011, 7, 313-327. | 0.4 | 62 |

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| 73 | Two-fluid modeling of bubbly flows around surface ships using a phenomenological subgrid air entrainment model. Computers and Fluids, 2011, 52, 50-57. | 1.3 | 27 |
| 74 | Nonlinear elasticity imaging. , 2011, , . | | 5 |
| 75 | Modeling air entrainment and transport in a hydraulic jump using two-fluid RANS and DES turbulence models. Heat and Mass Transfer, 2011, 47, 911-919. | 1.2 | 38 |
| 76 | Solution of the nonlinear elasticity imaging inverse problem: The incompressible case. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1406-1420. | 3.4 | 93 |
| 77 | Detached direct numerical simulations of turbulent two-phase bubbly channel flow. International Journal of Multiphase Flow, 2011, 37, 647-659. | 1.6 | 69 |
| 78 | Transversely Isotropic Elasticity Imaging of Cancellous Bone. Journal of Biomechanical Engineering, 2011, 133, 061002. | 0.6 | 19 |
| 79 | Solution of Inverse Problems in Biomechanical Imaging. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2011, , 203-222. | 0.3 | 1 |
| 80 | Adjoint–weighted variational formulation for the direct solution of inverse problems of general linear elasticity with full interior data. International Journal for Numerical Methods in Engineering, 2010, 81, 1713-1736. | 1.5 | 34 |
| 81 | Quantitative Ultrasonic Elastography for Gel Dosimetry. Ultrasound in Medicine and Biology, 2010, 36, 268-275. | 0.7 | 15 |
| 82 | Spectral analysis of the dissipation of the residual-based variational multiscale method. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 810-818. | 3.4 | 22 |
| 83 | A quantitative sub-grid air entrainment model for bubbly flows – plunging jets. Computers and Fluids, 2010, 39, 77-86. | 1.3 | 48 |
| 84 | Spectral analysis of turbulence based on the DNS of a channel flow. Computers and Fluids, 2010, 39, 640-655. | 1.3 | 35 |
| 85 | Theory of reconstructing the spatial distribution of the filtration coefficient in vascularized soft tissues: Exact and approximate inverse solutions. Comptes Rendus - Mecanique, 2010, 338, 412-423. | 2.1 | 3 |
| 86 | A Two-Way Coupled Polydispersed Simulation of Bubbly Flow Beneath a Plunging Liquid Jet. , 2010, , . | | 2 |
| 87 | A Review of the Mathematical and Computational Foundations of Biomechanical Imaging. , 2010, , 375-408. | | 21 |
| 88 | Spectral Cascade Modeling of Turbulent Flow in a Channel. Japanese Journal of Multiphase Flow, 2009, 23, 190-204. | 0.1 | 5 |
| 89 | Lanczos iterated time-reversal. Journal of the Acoustical Society of America, 2009, 125, EL70-EL76. | 0.5 | 4 |
| 90 | Quantitative three-dimensional elasticity imaging from quasi-static deformation: a phantom study. Physics in Medicine and Biology, 2009, 54, 757-779. | 1.6 | 75 |

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| 91 | Adjoint-weighted equation for inverse problems of incompressible plane-stress elasticity. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2412-2420. | 3.4 | 36 |
| 92 | Linear and nonlinear elasticity imaging of soft tissue *in vivo*: demonstration of feasibility. Physics in Medicine and Biology, 2009, 54, 1191-1207. | 1.6 | 138 |
| 93 | A computational technique to optimally design in-situ diffractive elements: applications to projection lithography at the resist resolution limit. Proceedings of SPIE, 2009, , . | 0.8 | 1 |
| 94 | Imaging of dose distributions using polymer gels based on radiation induced changes in stiffness. Journal of Physics: Conference Series, 2009, 164, 012039. | 0.3 | 0 |
| 95 | Optimal numerical solution of PDEs using the variational Germano identity. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2948-2962. | 3.4 | 8 |
| 96 | Generalized Smagorinsky model in physical space. Computers and Fluids, 2008, 37, 207-217. | 1.3 | 8 |
| 97 | Solution of the nonlinear elasticity imaging inverse problem: the compressible case. Inverse Problems, 2008, 24, 045010. | 1.0 | 102 |
| 98 | A spectral turbulent cascade model for single- and two-phase uniform shear flows. Journal of Turbulence, 2008, 9, N26. | 0.5 | 7 |
| 99 | Optimum design of echogenic needles for ultrasound guided nerve block. , 2008, , . | | 0 |
| 100 | A two-parameter variational multiscale method for large eddy simulation. Physics of Fluids, 2008, 20, 085107. | 1.6 | 6 |
| 101 | Adjoint-weighted variational formulation for the direct solution of plane stress inverse elasticity problems. Journal of Physics: Conference Series, 2008, 135, 012012. | 0.3 | 5 |
| 102 | A Stabilized B-Splines FEM Formulation for the Solution of an Inverse Elasticity Problem Arising in Medical Imaging. , 2008, , . | | 1 |
| 103 | Divergence of finite element formulations for inverse problems treated as optimization problems. Journal of Physics: Conference Series, 2008, 135, 012088. | 0.3 | 4 |
| 104 | Analytical Estimates of the Subgrid Model for Burgers Equation: Ramifications for Spectral Methods for Conservation Laws. International Journal for Multiscale Computational Engineering, 2008, 6, 299-307. | 0.8 | 0 |
| 105 | Adjoint-weighted variational formulation for a direct computational solution of an inverse heat conduction problem. Inverse Problems, 2007, 23, 2325-2342. | 1.0 | 23 |
| 106 | Elastic modulus imaging: some exact solutions of the compressible elastography inverse problem. Physics in Medicine and Biology, 2007, 52, 1577-1593. | 1.6 | 67 |
| 107 | The adjoint weighted equation for steady advection in a compressible fluid. International Journal for Numerical Methods in Fluids, 2007, 54, 683-693. | 0.9 | 8 |
| 108 | A dynamic multiscale viscosity method for the spectral approximation of conservation laws. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 1778-1792. | 3.4 | 7 |

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| 109 | Coupling between elastic strain and interstitial fluid flow: ramifications for poroelastic imaging. Physics in Medicine and Biology, 2006, 51, 6291-6313. | 1.6 | 71 |
| 110 | A dynamic approach for evaluating parameters in a numerical method. International Journal for Numerical Methods in Engineering, 2005, 62, 50-71. | 1.5 | 26 |
| 111 | Acoustic eigenvalues of rectangular rooms with arbitrary wall impedances using the interval Newtonâˆ•generalized bisection method. Journal of the Acoustical Society of America, 2005, 118, 3662-3671. | 0.5 | 25 |
| 112 | Evaluation of the adjoint equation based algorithm for elasticity imaging. Physics in Medicine and Biology, 2004, 49, 2955-2974. | 1.6 | 139 |
| 113 | An application of shape optimization in the solution of inverse acoustic scattering problems. Inverse Problems, 2004, 20, 199-228. | 1.0 | 48 |
| 114 | Sensitivity of the scale partition for variational multiscale large-eddy simulation of channel flow. Physics of Fluids, 2004, 16, 824-827. | 1.6 | 72 |
| 115 | Calculation of shear stresses in the Fourierâ€"Galerkin formulation of turbulent channel flows: projection, the Dirichlet filter and conservation. Journal of Computational Physics, 2003, 188, 281-295. | 1.9 | 8 |
| 116 | A Krylov subspace projection method for simultaneous solution of Helmholtz problems at multiple frequencies. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 4609-4640. | 3.4 | 15 |
| 117 | Solution of inverse problems in elasticity imaging using the adjoint method. Inverse Problems, 2003, 19, 297-313. | 1.0 | 267 |
| 118 | Computation of Trailing-Edge Noise Due to Turbulent Flow over an Airfoil. AIAA Journal, 2002, 40, 2206-2216. | 1.5 | 158 |
| 119 | The Variational Multiscale Formulation of LES with Application to Turbulent Channel Flows. , 2002, , 223-239. | | 2 |
| 120 | The multiscale formulation of large eddy simulation: Decay of homogeneous isotropic turbulence. Physics of Fluids, 2001, 13, 505-512. | 1.6 | 344 |
| 121 | Large eddy simulation of turbulent channel flows by the variational multiscale method. Physics of Fluids, 2001, 13, 1784-1799. | 1.6 | 384 |
| 122 | Shape sensitivity calculations for exterior acoustics problems. Engineering Computations, 2001, 18, 376-393. | 0.7 | 12 |
| 123 | A residual-based finite element method for the Helmholtz equation. International Journal for Numerical Methods in Engineering, 2000, 49, 399-419. | 1.5 | 61 |
| 124 | Computational procedures for determining structural-acoustic response due to hydrodynamic sources. Computer Methods in Applied Mechanics and Engineering, 2000, 190, 345-361. | 3.4 | 97 |
| 125 | A NUMERICAL COMPARISON OF FINITE ELEMENT METHODS FOR THE HELMHOLTZ EQUATION. Journal of Computational Acoustics, 2000, 08, 211-221. | 1.0 | 20 |
| 126 | A multiscale finite element method for the Helmholtz equation. Computer Methods in Applied Mechanics and Engineering, 1998, 154, 281-297. | 3.4 | 68 |

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|---|---------|-----|-----------|
| 127 | On the implementation of the Dirichlet-to-Neumann radiation condition for iterative solution of the Helmholtz equation. Applied Numerical Mathematics, 1998, 27, 443-464. | 1.2 | 36 |