Name of teacher:	Gordan Jelenić

Employed at: **Since:**	University of Rijeka, Faculty of Civil Engineering 1.3.2004

Title: **Since:** **In:**	Professor 22.5.2018 Engineering Mechanics, Technical Sciences

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Knowledge of foreign languages:	English, Slovene, Italian, Ruthenian (R,W,S); Spanish, French, Russian (R)

Qualifications	**- date of birth, nationality:** 12.7.1962, Rijeka, (Republic of Croatia) **- First degree obtained at:** University of Rijeka, Faculty of Civil Engineering (1986) **- Master degre obtained at:** University of Ljubljana, Faculty of Civil and Geodetic Engineering (1990) **- Ph.D. degree obtained at:** University of Ljubljana, Faculty of Civil and Geodetic Engineering (1993) **- additional education:** Imperial College London, Department of Aeronautics (1993-2004) **- previous employments:** Građevno projekti zavod Rijeka (1987-1990), University of Ljubljana, Faculty of Civil and Geodetic Engineering (1990-1993), Imperial College London, Department of Aeronautics (1993-2004)

List of papers published in scientific journals

List of papers published in Current Contents journals:

1. Saje, Miran; Jelenić, Gordan. Finite deformations of linear elastic space beams. Zeitschrift fur Angewandte Mathematik und Mechanik. 74 (1994); T298-T300
2. Saje, Miran; Jelenić, Gordan. Finite element formulation of hyperelastic plane frames subjected to nonconservative loads. Computers and structures. 50 (1994); 177-189
3. Jelenić, Gordan; Saje, Miran. A kinematically exact space finite strain beam model - finite element formulation by generalized virtual work principle. Computer Methods in Applied Mechanics and Engineering. 129 (1995), 1-2; 131-161
4. Crisfield, M.A.; Moita, G.F.; Jelenić, Gordan; Lyons, L.P.R. Enhanced lower-order element formulations for large strains. Computational mechanics. 17 (1995), 1/2; 62-73
5. Jelenić, Gordan; Crisfield, M. A. Non-linear 'master-slave' relationships for joints in 3-D beams with large rotations. Computer Methods in Applied Mechanics and Engineering. 135 (1996), 3-4; 211-228
6. Crisfield, M. A.; Jelenić, Gordan; Mi, Y.; Zhong, H-G.; Fan, Z. Some aspects of the non-linear finite element method. Finite Elements in Analysis and Design. 27 (1997), 1; 19-40
7. Crisfield, M. A.; Galvanetto, U.; Jelenić, Gordan. Dynamics of 3-D co-rotational beams. Computational Mechanics. 20 (1997), 6; 507-519
8. Jelenić, Gordan; Crisfield, M. A. Interpolation of rotational variables in nonlinear dynamics of 3D beams. International Journal for Numerical Methods in Engineering. 43 (1998), 7; 1193-1222
9. Jelenić, Gordan; Crisfield, M. A. Geometrically exact 3D beam theory: Implementation of a strain-invariant finite element for statics and dynamics. Computer Methods in Applied Mechanics and Engineering. 171 (1999), 1-2; 141-171
10. Crisfield, M. A.; Jelenić, Gordan. Objectivity of strain measures in geometrically exact 3D beam theory and its finite element implementation. Proceedings of the Royal Society of London Series A - Mathematical Physical & Engineering Sciences. 455 (1999), 1983; 1125-1147
11. Jelenić, Gordan; Crisfield, M. A. Dynamic analysis of 3D beams with joints in presence of large rotations. Computer Methods in Applied Mechanics and Engineering. 190 (2001), 32-33; 4195-4230
12. Jelenić, Gordan; Crisfield, M. A. Problems associated with the use of Cayley transform and

tangent scaling for conserving energy and momenta in the Reissner-Simo beam theory. Communications in Numerical Methods in Engineering. 18 (2002), 10; 711-720

13. Graham, E.; Jelenić, Gordan; Crisfield, M. A. A note on the equivalence of some recent time-integration schemes for N-body problems. Communications in Numerical Methods in Engineering. 18 (2002), 9; 615-620
14. Munoz, J. J.; Jelenić, Gordan; Crisfield, M. A. Master-slave approach for the modelling of joints with dependent degrees of freedom in flexible mechanisms. Communications in Numerical Methods in Engineering. 19 (2003), 9; 689-702
15. Graham, E.; Jelenić, Gordan. A general framework for conservative single-step time-integration schemes with higher-order accuracy for a central-force system. Computer Methods in Applied Mechanics and Engineering. 192 (2003), 33-34; 3585-3618
16. Munoz, J. J.; Jelenić, Gordan. Sliding contact conditions using the master-slave approach with application on geometrically non-linear beams. International Journal of Solids and Structures. 41 (2004), 24-25; 6963-6992
17. Munoz, J. J.; Jelenić, Gordan. Sliding joints in 3D beams: conserving algorithms using the master - slave approach. Multibody System Dynamics. 16 (2006), 3; 237-261
18. Graham, E.; Jelenić, Gordan. Conservative single-step time-integration schemes with higher-order accuracy for multi-particle dynamics with local two-point potentials. Computer Methods in Applied Mechanics and Engineering. 195 (2006), 37-40; 4917-4952
19. Jelenić, Gordan; Papa, Edita. Exact solution of 3D Timoshenko beam problem using linked interpolation of arbitrary order. Archive of applied mechanics. 81 (2011), 2; 171-183
20. Škec, Leo; Schnabl, Simon; Planinc, Igor; Jelenić, Gordan. Analytical modelling of multilayer beams with compliant interfaces. Structural engineering and mechanics. 44 (2012), 4; 465-485
21. Ribarić, Dragan; Jelenić, Gordan. Higher-order linked interpolation in quadrilateral thick plate finite elements. Finite elements in analysis and design. 51 (2012); 67-80
22. Škec, Leo; Jelenić, Gordan. Analysis of a geometrically exact multi-layer beam with a rigid interlayer connection. Acta mechanica. 225 (2014), 2; 523-541
23. Šćulac, Paulo; Jelenić, Gordan; Škec, Leo. Kinematics of layered reinforced-concrete planar beam finite elements with embedded transversal cracking. International journal of solids and structures. 51 (2014), 1; 74-92
24. Ribarić, Dragan; Jelenić, Gordan. Distortion-immune 9-node displacement-based quadrilateral thick plate finite elements that satisfy constant-bending patch test. International journal for numerical methods in engineering. 98 (2014), 7; 492-517
25. Ribarić, Dragan; Jelenić, Gordan. Higher-order linked interpolation in triangular thick plate finite elements. Engineering computations. 31 (2014), 1; 69-109
26. Papa Dukić, Edita; Jelenić, Gordan; Gaćeša, Maja. Configuration-dependent interpolation in higher-order 2D beam finite elements. Finite elements in analysis and design. 78 (2014); 47-61
27. Papa Dukić, Edita; Jelenić, Gordan. Exact solution of 3D Timoshenko beam problem: Problem-dependent formulation. Archive of applied mechanics. 84 (2014), 3; 375-384
28. Škec, Leo; Jelenić, Gordan; Lustig, Nikola. Mixed-mode delamination in 2D layered beam finite elements. // International journal for numerical methods in engineering. 104 (2015), 8; 767-788
29. Schnabl, Simon; Jelenić, Gordan; Planinc, Igor. Analytical buckling of slender circular concrete-filled steel tubular columns with compliant interfaces. Journal of constructional steel research. 115 (2015); 252-262
30. Gaćeša, Maja; Jelenić, Gordan. Modified fixed-pole approach in geometrically exact spatial beam finite elements. Finite elements in analysis and design. 99 (2015); 39-48
31. Jelenić, Gordan. Implicit one-step dynamic algorithms with configuration-dependent parameters : Application to central force fields. Meccanica. 51 (2016), 6; 1321-1341
32. Škec, Leo; Jelenić, Gordan. Geometrically non-linear multi-layer beam with interconnection allowing for mixed-mode delamination. Engineering fracture mechanics. 169 (2017); 1-17

	33. Grbčić, S., Ibrahimbegović, A., Jelenić, G. Variational formulation of micropolar elasticity using 3D hexahedral finite-element interpolation with incompatible modes. *Computers and structures* 205 (2018) 1-14 34. Škec, L., Alfano, G., Jelenić, G. On Gc, Jc and the characterisation of the mode-I fracture resistance in delamination or adhesive debonding. *International journal of solids and structures* 144-145 (2018) 100-122 35. Čeh, N., Jelenić, G., Bićanić, N. Analysis of restitution in free rocking of single rigid block. *Acta mechanica* 229 (2018) 4623-4642 36. Krvavica, N., Jelenić, G., Tuhtan, M. Efficient analytical Roe solver for two-layer shallow water systems with accurate treatment for loss of hyperbolicity. *Advances in Water Resources* 122 (2018) 187-205 37. Škec, L., Alfano, G., Jelenić, G. Enhanced simple beam theory for characterising mode-I fracture resistance via a double cantilever beam test. *Composites Part B* 167 (2019) 250-262 38. Škec, L., Alfano, G., Jelenić, G. Complete analytical solutions for double cantilever beam specimens with bi-linear quasi-brittle and brittle interfaces. *International journal of fracture* 215 (2019) 1-37 39. Grbčić, S., Jelenić, G., Ribarić, D. Triangular and quadrilateral 2D linked-interpolation finite elements for micropolar continuum. *Acta Mechanica Sinica* 35 (2019) 1001-1020 40. *Grbčić, S., Jelenić, G., Ibrahimbegović, A. Geometrically non-linear 3D finite-element analysis of micropolar continuum. International Journal of Solids and Structures 202 (2020) 745-764*

List of publications which serve as a proof of teaching qualifications	As above

Leader of the following research projects	1. Nonlinear finite element method for mechanical problems with spatial rotations, Engineering and Physical Sciences Research Council (UK), 1.1.1999-31.12.2003 (GBP 153,338.00) 2. Nonlinear finite element techniques for the design of flexible mechanisms, Engineering and Physical Sciences Research Council (UK), 1.10.2000-30.9.2003 (GBP 63,000.00) 3. Improved accuracy in non-linear beam elements with finite 3D rotations, Ministry of Science, Education and Sports (HR), 1.1.2007-31.12.2009 (€28,000.00) 4. Non-linear numerical modelling of 3D reinforced concrete frame stuctures subject to reinforcement corrosion, Ministry of Science, Education and Sports (HR) and Agency of Research Affairs (SI), 1.1.2009-31.12.2010 (€2,800.00) 5. Configuration-dependent approximation in non-linear finite-element analysis of structures, Croatian Science Foundation (HR), 1.9.2014-31.8.2018 (€130,000.00) 6. Carrer development of young researchers – education of new doctors of sciences (PhD Studentship) – 2014. call, Croatian Science Foundation (HR), 1.1.2015-31.12.2018 (€60,000.00) 7. Degraded bending and buckling strength of multi-walled carbon nanotubes due to interface compliance, Ministry of Science, Education and Sports (HR) and Agency of Research Affairs (SI), 1.1.2016-31.12.2017 (€2,000.00) 8. Carrer development of young researchers – education of new doctors of sciences (PhD Studentship) – 2015. call, Croatian Science Foundation (HR), 1.10.2016-30.9.2020 (€65,000.00) 9. Experimental study of large-span structure considering multiple support excitation, Ministry of Science and Education (HR) and Ministry of Education (People's Republic of China), 1.2.2018-31.1.2020 (€8,000.00) 10. Fixed-pole concept in numerical modelling of Cosserats' continuum, Croatian Science Foundation (HR), 1.1.2019-31.12.2022 (€130,000.00) 11. Carrer development of young researchers – education of new doctors of sciences (PhD Studentship) – 2018. call, Croatian Science Foundation (HR), 15.3.2019-14.3.2023 (€65,000.00) 12. Rigid-body rocking on a flexible structure – non-smooth contact-dynamics approach and

	experimental validation, Ministry of Science and Education (HR) and German Office for Academic Exchange (Federal Republic of Germany), 1.1.2019-31.12.2020 (€6,000.00) 13. Computational and experimental procedures for assessment of material parameters in Cosserats' continuum, University of Rijeka. 1.1.2019-31.12.2021 (€18,500.00) 14. Joint training on numerical modelling of highly flexible structures for industrial applications, EU Commission (H2020 MSCA ITN-ETN 2019), 1.10.2019-30.9.2023 (€237,367.08) 15. Carrer development of young researchers – education of new doctors of sciences (PhD Studentship) – 2020. call, Croatian Science Foundation (HR), 1.1.2021-31.12.2024 (€65,000.00)

Participant in the following research projects	1. Finite element techniques for rigid and flexible mechanical systems, Engineering and Physical Sciences Research Council (UK), 1.10.1994-1.4.1998 2. Finite elements in non-linear dynamics, Engineering and Physical Sciences Research Council (UK), 1.4.1997-1.10.1997 3. Evidence Based Characterisation of Dynamic Sensitivity for Multiblock Structures – Computational Simulation and Experimental Validation, Unity through Knowledge Fund, 1.11.2013-31.10.2015 4. Assumed strain method in finite elements for layered plates and shells with emphasis on the layer delamination problem, Croatian Science Foundation (HR), 1.3.2017-28.2.2021 5. Experimental study of bridge structures considering the asymmetric effect under multiple support excitation, Ministry of Science and Education (HR) and Ministry of Education (People's Republic of China), 1.1.2020-31.12.2021

Supervision of MSc theses	0

Supervision of PhD theses	9

Examination of MSc theses	1

Examination of PhD theses	8