## Floating-point Presentations, papers and patent of James Brakefield

**Column header info at bottom**

| Date | Format | Topic | Author | Nature | Where | Web Link | location | Title | Comments | Abstract |
|---|---|---|---|---|---|---|---|---|---|---|
| 2/24/2025 | pptx | uP Arch | JCB | info | C16 | https://events.vtools.ieee.org/m/467923 | Web page | A Digital Processor of RISC Variety Suitable for Architecture Exploration | Includes slides from earlier 2/16/2016 talk Covers TROC16; 6 attachments | RISC computer architecture of my design in an effort to achieve high code density, deterministic execution and a uniform base for diversity. Architecture provdes for four data sizes and four data types. |
| 11/6/2023 | pptx | fltg-pt | JCB | info | C16 | https://events.vtools.ieee.org/m/381287 | Web page | Floating-Point Arithmetic and Brakefield's Patent | https://patents.google.com/patent/US5892697A/en | Balanced talk on computer floating-point arithmetic and his often cited patent 4 attachments |
| 9/17/2019 | pptx | fltg-pt | JCB | info | C16 | https://events.vtools.ieee.org/m/203892 | Web page | Introduction to Posit™ Arithmetic | Figures and some slides curtesy of John Gustafson | New floating-point format originated by John Gustafson. Posits take, in many cases, half the memory space as IEEE-754 |
| 3/17/2002 | doc | fltg-pt | JCB | info | C16 | | Git hub | An Engineer's rework of IEEE-754 Floating-Point | | |
| 1/1/2002 | doc | fltg-pt | JCB | info | Austin Consuta | | Git hub | An Engineer's rework of IEEE-754 Floating-Point | | |
| 4/25/1999 | doc | fltg-pt | JCB | info | IEEE Austin | | Git hub | The Case for Alt-754 Floating-Point | Presented to IEEE Austin consultants group | The floating-point advocated in this paper, herein called alt-754, was motivated by certain hardware and software complexities of IEEE-754. |
| 4/6/1999 | pdf | fltg-pt | JCB | patent | USPTO | https://patents.google.com/patent/US5892697A/en | Web page | **US Patent 5,892,687: Method and Apparatus for Handling Overflow and Underflow in Processing Floating-Point Numbers.** | filed 12/19/1995, currently cited by 71 other patentss | means for converting the resulting floating-point value from the floating-point register representation to the random access memory representation |
| 10/1/1977 | txt | fltg-pt | JCB & Matt Quinn | paper | Huntsville | https://ntrs.nasa.gov/citations/19780042284 | Web page | Variable length data formats. Data Management Symposium; Huntsville, AL; Oct 1977 Proceedins p. 243-253. | J. C. Brakefield and **M. J. Quinn** | All the sundry floating-point formats I had collected at the time |
| 1/1/1972 | scan pdf | fltg-pt | JCB | paper | Sigarch | https://github.com/jimbrake/Slides-Papers-Reports | Git hub | An Optimal Floating Point Format | grad student at UW Madison | Floats with exponent and mantissa signs in the middle allowing zero extension on both ends |
| | scan pdf | uP Arch | JCB | paper | IEEE Comput | | Git hub | **Brakefield, J.C. 1975. Aspects of computer architecture. IEEE Computer Society Repository, R-75-286.** | Interesting to compare present concerns with those 50 years ago | |
| These seven papers are available free from ACM. Three others are listed and not free. | | | | | | search on "ACM James Brakefield", free | | Brakefield's ACM publications, citations and downloads | Many of the ACM papers were first given as DECUS talks | 7 citations, 1339 total downloads, 1980 to 1991 |

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| Column B | Date | presentation date or publication date |
| Column C | Format | powerpoint, PDF, txt, scanned pdf, docx, doc, xlsx, xilinx ISE project |
| Column D | Topic | one or two words |
| Column E | Author | JCB: James C. Brakefield, others as listed in comments |
| Column F | Nature | info (STEM level presentation), course, paper, patent, report |
| Column G | Where | Where presented, often IEEE Lonestar section at LMAG or Computer chapter |
| Column H | Web Link | Web page for paper or presentation |
| Column I | location | Location of slides/paper: listed Web page, Github (github/jimbrake), opencores.org, other |
| Column J | Title | Web page title and pptx file title may differ |
| Column K | Comments | Side information |
| Column L | Abstract | Culled from web page announcement or source file |