# Gottfried Wilhelm Leibniz - Universal genius and outstanding mathematician

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The universal genius Gottfried Wilhelm Leibniz (1646-1716) contributed to nearly all scientific disciplines and left the incredibly huge amount of about 200.000 sheets of paper that are kept in the Leibniz Library of Hannover. About 4.000 of them regarding natural sciences, medicine, technology have been digitized and are freely available on the internet: http://ritter.bbaw.de. Less than half of them have been published up to now. Hence we know for example - for the time being - only about one fourth of his mathematical production. The lecture will give a short survey of his biography and mainly deal with the following six aspects:

1. Leibniz as an organizer of scientific work: His presidency of the Berlin Academy of Sciences;
2. His rigorous foundation of infinitesimal geometry;
3. Leibniz as the inventor of the differential and integral calculus;
4. His conception of and his contributions to a general combinatorial art (symmetric functions, number theory, insurance calculus);
5. His proposals for engineering improvements in mining;
6. Leibniz's invention of the first real four-function calculating machine.