



# Kateryna Yushchenko

Coding pioneer and a creator of one of the world's first high-level computer programming languages

Kateryna Yushchenko was born in Chyhyryn in Central Ukraine in 1919. She began her studies at Kyiv State University, but after her father was denounced as a 'Ukrainian nationalist' and 'enemy of the people' during the Stalinist purges resulting in the arrests of both her parents, the young Kateryna was kicked out of university, and she ended up transferring to the Uzbek State University in Samarkand. In 1943 she was told to report to duty as a maths and physics teacher at an elementary school in Tashkent. After the liberation of Ukraine from the Nazis, she

was able to get a job as a teacher in Stryi, a small town south of Lviv in Western Ukraine. She taught maths and physics there from 1945 to 1946, but what she really wanted to do was to continue her scientific research. She visited the newly opened branch of the Institute of Mathematics at the Ukrainian Academy of Sciences in Lviv, and was immediately invited to join the group working on probability theory.

In 1951 this research group, along with the whole Ukrainian Institute of Mathematics, were transferred from Lviv to Kyiv. This was very



Top right: Registration card of the State Prize of the USSR Awardee



Kateryna was a star student, but she did not get any job offers in her field after graduating from the university in 1942, so for about a year she worked as an explosives specialist at a mine, blowing up dynamite to get coal for the war effort

In 1950 Yushchenko was awarded a Doctorate in Mathematics for her original results on the laws of multidimensional stable distributions — an important contribution to quantum mechanics

fortuitous, as it meant that in 1952 she was sent to help with Sergey Lebedev's MESM computer. The MESM, while being envisioned as a prototype, became extremely popular among many teams working on complex computational problems. However, it was cumbersome to translate a specification for each business case into code for the MESM, so Kateryna Yushchenko developed a high-level computer

programming language to speed up the programming.

In 1955, Kateryna finished developing her Address Programming Language. It preceded such well-known address programming languages as FORTRAN (1958), COBOL (1959) and ALGOL (1960). Her language was used in all first-generation Soviet computers, including the MESM, the BESM and the Dnieper for the next 20 years.